THE POLAR TIMES

January 2014

President's Message

Dear Fellow American Polar Society members, I trust that you have had a most happy Thanksgiving and Christmas holiday and are looking forward to the coming New Year!

This past year has been a good one for the American Polar Society, with a successful 75th Anniversary Symposium at Woods Hole, Massachusetts, in April and the publication and distribution to each of you of our 75th Anniversary special issue of *The Polar Times*. We hope to raise sufficient money during the months ahead to print additional copies of this beautiful issue that can be made available to the general public through the APS's superb web site and Amazon.com. The net result could do much to increase the APS's overall financial health and ability to better sustain the web site and to accelerate the planning for our next symposium.

This next time we look forward to hosting a symposium on the West Coast of the U.S., possibly at The Scripps Institution of Oceanography at La Jolla, California, in either the spring or fall of 2015 (not 2014 as originally stated). Plans are to make this a world-class event that focuses on current and predicted effects of global warming on the Polar Oceans. We will be looking for top authorities to address all aspects of this most important subject in a way that can be best understood by the media and general public. It is my hope that many of you will step forward to make your expertise known in this regard and actively participate in attendant discussion or workshop groups.

As you already know, members of the APS constitute a unique reservoir of information and expertise on the Polar Regions. Such deep knowledge is now critically needed for the sake of all living things. We must, both as individuals and as a society, step forward and do all we can to advise and assist our nation and the world in both adapting to and mitigating the effects of global warming, before it overwhelms our planet.

Your fellow officers and I look forward to hearing your thoughts and suggestions in this regard!

My warmest regards,

President, APS

ABOUT OUR COVER

"Frozen Breath" — Felicity Aston, the first woman to cross Antarctica alone, her face completely covered to protect her skin from freezing in the extreme sub-zero temperatures. (Photo: © Felicity Aston)

Special Opportunity for All Members of the APS

A note from Cliff Bekkedahl, Managing Editor, *The Polar Times*

Members, step right up to take advantage of a very special opportunity with two easy options!

Sheldon Bart, who is on our Board of Governors, has just authored a book titled *Race to the Top of the World: Richard E. Byrd and the First Flight to the North Pole* (see book review, page 33). It is a splendid piece of work—definitive, detailed, informative and, best of all, a great read! If there were a best-seller category for polar literature, this book would shoot to the top and stay there for a long, long time.

No, Sheldon is not my brother–in-law! Moreover, he has nothing to do with the following. This was all my brainstorm. When I put Sheldon's book down, I thought, "Now here is something we can use to both enliven the search for new members *and* facilitate our fund-raising efforts! We'll make Sheldon's wonderful book available to old and new members alike and make this deal a win-win for everyone." The following is the result of that brainstorm:

OPTION 1: A gift package—A hardbound copy of *Race to the Top of the World* **PLUS** a year's membership in the APS for a friend, colleague, student, relative or anyone with a lively intellect. The cost? A mere $35 plus mailing. The book alone retails for $29.95, and a year's dues for the APS comes in at $25, so, hey! Do the math! This is a cool gift for a grown-up and a savings for you!

OPTION 2: The "NPR schtick"—Donate $80 or more to the APS and receive a hardbound copy of *Race to the Top of the World*.

Hellooo! We can't keep the boat afloat without new members! And how much easier or more attractive can we make the effort to recruit 'em? What better way to help the APS while simultaneously reminding others of a time when our nation's heroes did more than strum guitars!

And don't forget—a gift to the APS is deductible! Let us be your first 2014 tax deduction! For $35 you can underwrite a year's membership in the APS for a new member AND receive a hardbound copy of Sheldon's book. There must be someone you know who would enjoy reading *The Polar Times*. How about your wife, so she can have her own copies? How about adult children, or grandkids in or off to college (and maybe thinking about a career in science); a neighbor, colleague, student (maybe give as a prize), a creditor ... there has to be somebody!

And again, for those out of touch with humanity and living atop Mt. Pinatubo, there's the "NPR option" of an $80 donation, for which you receive a copy of *Race to the Top of the World* for your very own, to enjoy in solitude!

Contact me at cv1957@optonline.net or Charles Lagerbom at aps@bluestreakme.com to exercise one or both of these irresistible options.

Choose one—then do it! The APS thanks you.

American Polar Society

The American Polar Society was founded Nov. 29, 1934, to band together all persons interested in polar exploration. Regular membership dues are $25 a year ($35, foreign) and entitle members to receive *The Polar Times* twice a year. The American Polar Society is classified as a tax exempt organization under Sec 501(C)3 of the IRS Code. For more information about the American Polar Society, contact Charles Lagerbom, APS Membership Chair, at aps@bluestreakme.com

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Paths to Polar Careers—Where and How?

by Cliff Bekkedahl, Managing Editor

Is there a member of the American Polar Society unfamiliar with the name Paul Siple and how he became a historical figure in 20th century American polar affairs? If so, then they haven't read that beautiful book on their coffee table entitled *Seven Decades and Seven Years of Service to the Polar Community.*

No, this is not an infomercial but, rather, a lead-in to a topic that will be offered as a series in *The Polar Times* over the next several issues.

The Paul Siple story—of how he became an explorer, scientist and polar celebrity—is just one of a host of stories of men and women living their lives and carving careers in polar regions, who found their way north or south by accident, expediency, sheer whim, good luck or whatever. Who can forget Shackleton's famous want-ad offering "low pay, terrible working conditions and risk of failure or worse?"

Nowadays, it is quite different. Military service in WWII and thereafter introduced legions of men and women to the icy reaches of the globe. Some stayed, most left. Oil and other natural resource exploitation has drawn thousands upon thousands north to the Arctic, and this migration in and out is bound to continue. Government and privately sponsored scientific ventures in the Polar Regions have produced a national and international cadre of polar scientists, and their ranks grow steadily year after year.

Yes, today it is quite different. But, are there currently clear-cut, highly visible paths to careers in the Arctic and Antarctic? Certainly, if you major in petroleum engineering, chances are good that you could spend a lot of time north of Latitude 60. Or, if you attend Ohio State University and manage to persuade Lonnie Thompson that you have a lifelong fascination with ice cores, then glaciers and other enormous chunks of ice underfoot will be a large part of your destiny.

But bear in mind, Dr. Thompson is a busy man and can't spend all his time interviewing ice core enthusiasts. Also, that there is a new word in the energy business—"fracking"—that may have a bearish impact on Arctic oil exploration.

Where is all this leading? We here at *The Polar Times* think it might be useful to develop a series of articles on the educational and professional opportunities for careers in and around the Polar Regions. Hopefully the series will be an informative and enlightening read and possibly a resource for members in a position to counsel youngsters who are seeking a challenging life experience.

We will start by identifying some known players in the academic world who offer undergraduate and graduate programs in the polar sciences. Some, we will visit; or we will call upon the various directors of Polar Studies to describe their programs, staffs and students and their areas of specialization.

As always, *The Polar Times* seeks member participation and support. So, those of you who are in the academic world, please send us material or introduce us to the appropriate source for telling the story of your organization, its mission and achievements.

To begin this series we offer an excerpt from a paper authored by Robert Rutford and John Splettstoesser, at the behest of the Department of Earth Sciences at the University of Minnesota. Written for other purposes, portions of this paper fit perfectly with the objectives of our series. It describes what has essentially become a prototype of the many "Polar centers" to be found on college campuses nationwide.

THE polar CENTER

Call it the Minnesota model

The history of geology students and faculty from the University of Minnesota involved in Antarctic research is rich with major discoveries that involved field work in mainly the interior of the continent, little known until the start of the third Polar Year (PY), also known as the International Geophysical Year (IGY), an 18-month period from 1 July 1957 to 31 December 1958.

The Minnesota model can be viewed as a prototype of one of several "Polar Centers" that began during and shortly after the IGY because of a need for academic institutions that had the facilities and faculty who took an interest in Antarctica and saw the opportunities provided by a funding system in the National Science Foundation that would likely continue through several years of research. The combination of adventure

Photo by Dr. Eric Post

Muskox in West Greenland

Polar Career Luminaries

Dr. Robert H. Rutford
Ph.D. University of Minnesota, 1969

Dr. Robert "Bob" Rutford was Assistant Field Leader in the 1960-61 season, an exploration of newly discovered (and named) Jones Mountains. Cam Craddock led the expedition and employed six students in the Department of Geology as field assistants. Rutford returned to the Antarctic twice in the Ellsworth Mountains, and also revisited the Jones Mountains. Highlights of Rutford's professional career follow:

- 1975-77—Director of the Division of Polar Programs at the National Science Foundation
- 1977-82—Vice Chancellor for Research and Graduate Programs, University of Nebraska-Lincoln
- 1982-94—President, University of Texas-Dallas
- 1998-02—President, SCAR

Rutford Ice Stream and Mount Rutford are named for him in the Ellsworth Mountains. ¶

John Splettstoesser
BS in Geological Engineering, University of Minnesota, 1962

John Splettstoesser participated in two expeditions to Antarctica under the direction of Campbell Craddock, in 1960-61 and 1961-62, and following seasons while at other universities in the period 1969 to 1985-86 on an additional six expeditions.

Splettstoesser Glacier (Ellsworth Mountains) and Splettstoesser Pass (northern Victoria Land) are named for him. ¶

Dr. Campbell Craddock (1930 -2006)
Ph.D., Columbia University

Dr. Campbell "Cam" Craddock was a Professor of Geology at the University of Minnesota when he began the first of many expeditions to Antarctica, 1959-1967, employing graduate students in the Department of Geology. He selected two students for the 1959-60 austral summer in Antarctica—John J. Anderson, who would later write a Master's thesis, and Robert H. Rutford, who did a Ph.D. degree under Dr. H.E. Wright, Jr., as advisor. During that season, Anderson and Rutford were both privileged to experience the field environment and working conditions in Antarctica, which became valuable in succeeding seasons when they led field programs with other U of M students.

Professor Craddock moved from the University of Minnesota to the University of Wisconsin in 1967 and continued his leadership of expeditions to Svalbard and Alaska, hiring students for field work that resulted in graduate degrees.

Mount Craddock and Craddock Massif are named for him in the Ellsworth Mountains. ¶

and stability for project funding readily appealed to both faculty and students to achieve recognition in their chosen professional fields that would last through several years of graduate study leading to scholarly research and peer-reviewed publications.

This example is one of several that emerged at the time of the IGY, and several have continued to thrive as centers of polar research where students have the ability to apply to an academic institution and produce research results that can bring acclaim to themselves as well as to the institution.

The Minnesota model has offered many important lessons for those embarking on polar careers, too many to repeat herein, but ranking of major importance is for students to assess the opportunities available and ensure that experienced leaders and managers of polar expeditions are part of the institution they hope to join.

Bob Rutford and John Splettstoesser, in their paper, cite Dr. Campbell Craddock as a stellar example of the polar expedition leader/manager and provided the thumbnail sketch of Cam Craddock that appears with this article. Their own short bios also appear.

We expect to encounter a large number of institutions that are reflections of the Minnesota Model with many, if not most, sharing the common denominator of NSF funding. Many more have evolved, taken the name of "polar centers" and created interdisciplinary organizations spearheaded by recognized authorities devoted to polar sciences.

Penn State Polar Science Center

One such example is the "new kid on the block," the Penn State Polar Science Center.

Formally established in April 2013 under the direction of Dr. Eric Post, Ph.D., Professor of Biology and Ecology at PSU, the Polar Center is described as the engine driving cross-disciplinary collaboration and creativity at this 47,000-student institution. *The Polar Times* was recently privileged to meet with students and faculty of the Polar Center and found that they were totally committed to the systems-level approach to the study of the polar regions.

And what better place to ask the question central to the purpose of this series than of a newly minted organization amidst a sea of life, physical and social sciences. The question? How do students find their way within the university to the Polar sciences?

The answers are manifold. Word of mouth and peer influence; from others who emerge from disciplines of study such as Biology, plant and animal studies, Geology, Geography, Physics, the Geosciences, Meteorology, Anthropology; and, as one faculty member said with a chuckle, "Sometimes they just show up at your office door and ask if they can join a field project." He added that "If they have a strong background in science, math and computers, they have a good chance of being accepted."

Our visit to the Penn State Polar Center last November provided a glimpse of the workings of an inter-disciplinary organization and an introduction to many of the faculty and students that make things happen.

Pernill Sporon Boving, from the Department of Biology—who, when she is not pursuing her specialty of behavioral ecology, serves as the outreach coordinator for the Polar Center—was our host and guide. She and Associate Professor Russ Graham, Department of Geosciences, gathered several graduate students to meet with us and describe their projects in the fields of polar sciences.

Two Geophysics Ph.D. candidates, Nick Holschuh and Kiya Riverman, were engaged in projects north in Greenland, and Nick was "bipolar," having an additional project in Antarctica. Both were studying glacier activity, ice melting, ice flows and applying a variety of measurement techniques—seismic, radar, and computer modeling.

The Bering land bridge, long a subject of study and debate, is the focus of research for Soumaya Belmecheri, Ph.D., in the Climate Sciences, and she seeks some answers by way of temperature reconstructions from lake sediments in St. Paul Island in the Bering Sea.

A blessedly short visit to the refrigeration facilities for preservation of ice cores extracted from Antarctica was the next stop on a tour of Polar Center assets. The cores were being analyzed by Todd Sowers, Senior Research Associate, for biochemical trace gases that would reveal relations between climate and greenhouse gases over the last millennia.

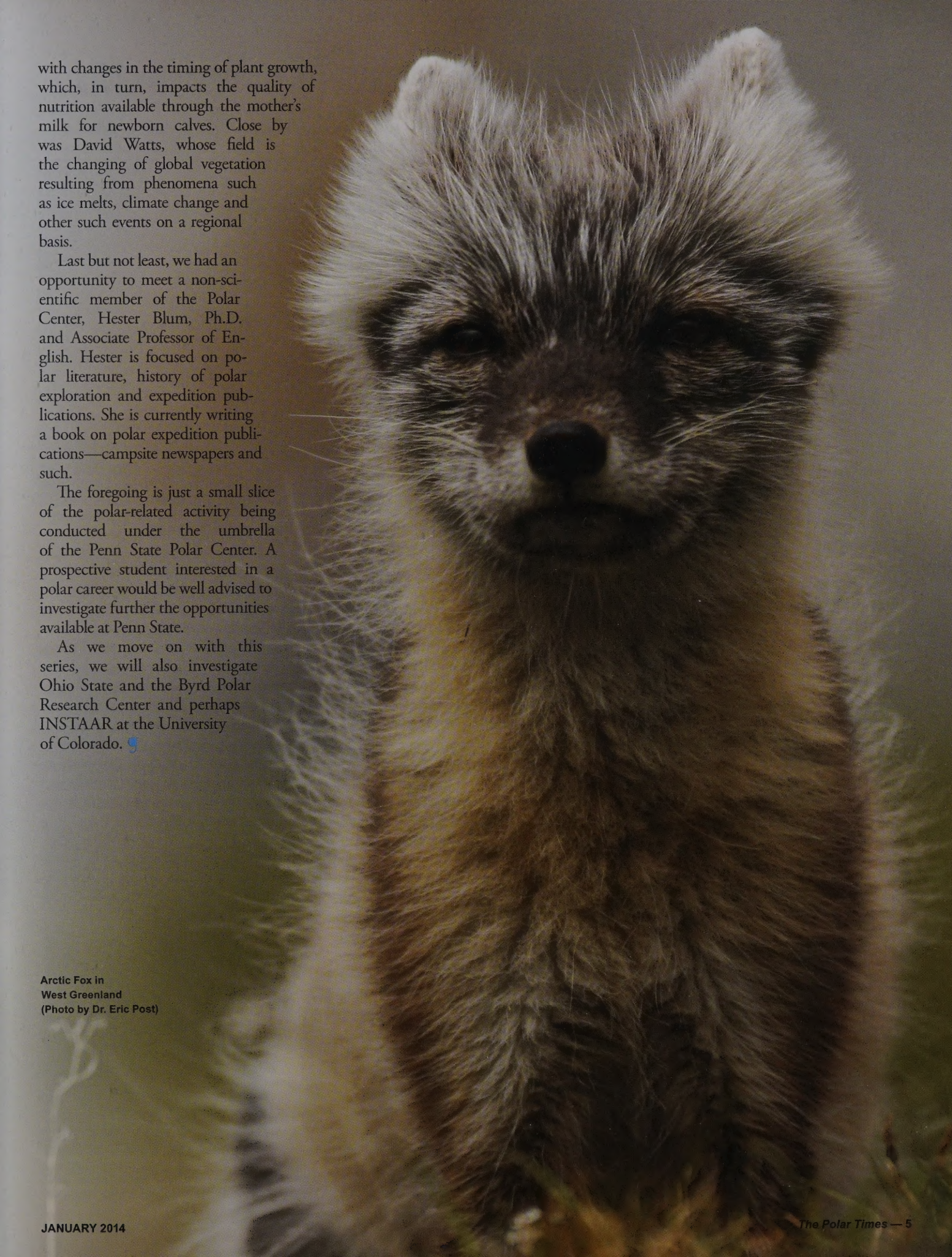
Taking departure from the hard sciences, we met with two Ph.D. candidates and a post-Doctoral Associate in the Department of Biology. The Ph.D. students were engaged in a study in Greenland that began close to 20 years ago. Jeff Kirby monitors the calving cycle of caribou in Greenland and has recently published, with co-author Dr. Eric Post, a study that relates melting sea ice

with changes in the timing of plant growth, which, in turn, impacts the quality of nutrition available through the mother's milk for newborn calves. Close by was David Watts, whose field is the changing of global vegetation resulting from phenomena such as ice melts, climate change and other such events on a regional basis.

Last but not least, we had an opportunity to meet a non-scientific member of the Polar Center, Hester Blum, Ph.D. and Associate Professor of English. Hester is focused on polar literature, history of polar exploration and expedition publications. She is currently writing a book on polar expedition publications—campsite newspapers and such.

The foregoing is just a small slice of the polar-related activity being conducted under the umbrella of the Penn State Polar Center. A prospective student interested in a polar career would be well advised to investigate further the opportunities available at Penn State.

As we move on with this series, we will also investigate Ohio State and the Byrd Polar Research Center and perhaps INSTAAR at the University of Colorado.



Arctic Fox in West Greenland (Photo by Dr. Eric Post)

Conversations with the Sun and Little Men on Mini-Triceratops Dinosaurs

by Moki Kokoris

Felicity Aston is the first woman in the world to cross Antarctica… ***alone.***

Only two other people had accomplished the same feat before her, both of them Norwegian men. It was on January 22, 2012, that Felicity's arrival in Hercules Inlet brought the 34-year old British explorer's 59-day, 1,744 kilometer journey to a close… a journey during which she experienced what she calls "a whole new league of aloneness."

A candy originally named "Opal Fruits," now known as "Starburst," was the reward with which Felicity's parents bribed her up Helvellyn Mountain in England's Lake District at the age of nine. With that achievement (if even tempered by misty rain) began her impressive career as an adventurer, climate scientist, physicist, polar explorer, expedition leader, public speaker and freelance writer.

After receiving a Masters Degree in Applied Meteorology from the University of Reading in the UK, Felicity accepted the position of Senior Meteorologist with the British Antarctic Survey and spent three summers and two winters consecutively at Rothera Research Station on Adelaide Island off the Antarctic Peninsula. As her biography lists: "She has also raced in the Canadian Arctic, led a team of women across the inland ice of Greenland, led a record-setting international expedition to the South Pole, searched for meteorite craters in Quebec, skied along a frozen river in Siberia, traversed the winter ice of Lake Baikal, and completed the infamous Marathon Des Sables across the Moroccan Sahara." As of the printing of this publication, along with two teammates, Gisli Jonsson and Manu Palomeque, Felicity has embarked on a new endeavor called the "Pole of Cold: Winter Expedition"—a three-month, 3,000-kilometer journey that will chase winter across northern Europe and into Siberia toward Oymyakon (population 475) in the Sakha Republic of Russia, also known as the Pole of Cold—the coldest inhabited place in the world. The expedition can be followed on its dedicated website, http://poleofcold.com/

Photo: © Felicity Aston

Felicity Aston brandishing the national flag of the United Kingdom upon her arrival at the Geographic South Pole.

While many of Felicity Aston's experiences are described in her books (*Call of the White: Taking the World to the South Pole* [Summersdale, 2011] and *Alone in Antarctica* [Summersdale, 2013]) and in many articles in which she has been featured, *The Polar Times* recently engaged her in a Skype interview during which some less common questions were posed for her to answer. We are pleased to share portions of the interview here.

TPT: As a young elementary grade school student, when asked what you wanted to be when you grew up, what did you say?

FA: I went to a Roman Catholic school and we were taught that nuns were good people who helped others. On that basis I decided I was going to be a nun when I grew up. I soon realized there was more to it and that I probably wasn't suited. The only other profession I remember ever catching my imagination was seeing wing-walkers at an air show—ladies propped up on the upper wing of biplanes doing aerobatics. I decided that was a pretty awesome way to make a living.

Photo: © Felicity Aston

Felicity and the Sun enjoy their camaraderie in Horseshoe Valley.

TPT: Since we must presume that some readers are first learning about you and your endeavours here, could you share with us when the first thought of taking on the challenge of crossing Antarctica alone entered your mind? Was it a childhood dream?

FA: The idea of crossing Antarctica alone has been in my head for so long that I'm not sure when or where it first appeared. Every expedition I have put together has been a little more challenging than the last in some way, so perhaps it was partly a natural progression—combined with curiosity. I wanted to know what it would feel like to be in such a place completely alone, to have that vastness to myself. I was curious to know how I would react and whether I would or could cope.

TPT: After the "Alone" expedition, is the concept of solitude more or less meaningful to you? Did your sense of solitude evolve; in other words, is it now a friend or foe?

FA: I have always been very comfortable in my own company, and that hasn't changed—but I think that I now appreciate the true meaning of isolation. I know how truly terrifying it can be and that it changes the way we behave. This deeper understanding hasn't made me fear being alone necessarily, it has just made me aware of just how precious my relationships with others are and made me see clearly how we are shaped as people by those relationships and connections.

TPT: What is your proudest or most rewarding achievement to date?

FA: Wow—this question has me stumped. I have thought about it long and hard. I'm proud of each and every one of my expeditions because they have all taken so much effort and determination and belief to pull together. I'm also proud of the two books I've written—I still get a swell of pride every time I see my name on a spine in a bookshop. But perhaps what I'm most proud of is the fact that I've managed to make a living out of doing what I love. It hasn't been easy—and it's still not a given—but I'm very proud of myself for not giving up, for fighting to carve out a life for myself that is unique to me.

TPT: Did you bring a good luck charm (lucky socks) with you on your trek across Antarctica? Were there any superstitions that developed during your journey? What was your most precious item that you had with you (not counting your sat-phone connection)?

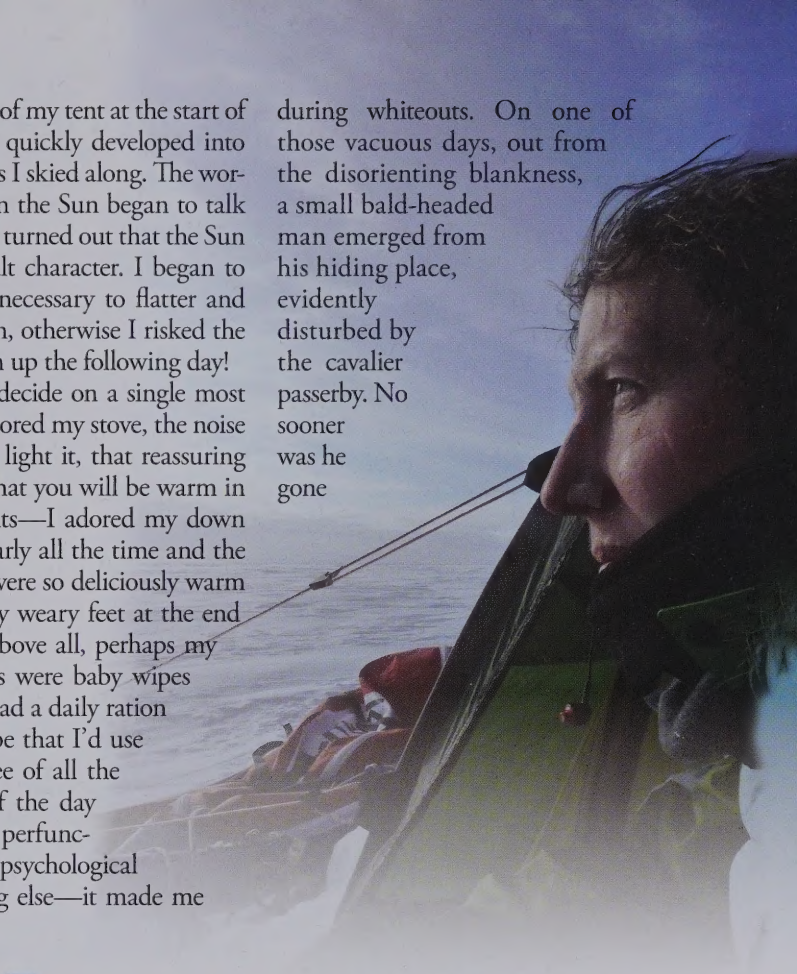
FA: Weight is so critical that I am very strict with myself in cutting out all non-essential items, including books, journals, lucky mascots and treat ... but ... I did wear a stone from New Zealand around my neck that has come with me on all my expeditions, a small locket my sister gave me as I left, and a tiny St. Christopher from my aunt.

I certainly developed plenty of superstitions during my journey. Every time I skied away from any place I had camped, I made a point of pausing to thank aloud the ground and the space for looking after me so well. Perhaps most significantly of all, I developed a very real relationship with the Sun. It started off by simply saying "good morning" to the Sun as I got out of my tent at the start of each day—but this quickly developed into talking to the Sun as I skied along. The worrying part was when the Sun began to talk back, in my head. It turned out that the Sun was a rather difficult character. I began to believe that it was necessary to flatter and compliment the Sun, otherwise I risked the Sun refusing to turn up the following day!

PHOTO CREDIT: © POLE OF COLD EXPEDITION

The "Pole of Cold: Winter Expedition" team: (L to R) Gisli Jonsson, Felicity Aston and Manu Palomeque, training in Iceland with a Land Rover Defender.

It is difficult to decide on a single most precious item—I adored my stove, the noise it makes when you light it, that reassuring roar that tells you that you will be warm in a matter of moments—I adored my down gilet that I wore nearly all the time and the down booties that were so deliciously warm as they slid onto my weary feet at the end of each day—but above all, perhaps my most precious items were baby wipes and moisturizer. I had a daily ration of a single baby-wipe that I'd use to wipe my face free of all the grease and sweat of the day and to have a very perfunctory wash. It was psychological more than anything else—it made me feel human again!



Looking at the view from her tent on the Antarctic Plateau. (PHOTO: © Felicity Aston)

Felicity is often an invited guest speaker at conferences and corporate functions, and it is during these talks that she lays bare her emotions that are frequently interspersed with humorous and entertaining anecdotes about her experiences. The solo Antarctic crossing not only offered her a new perspective from which to better understand the true definition and nuances and variations of the term "alone," but it revealed the tricks an alone mind can play on its possessor.

As she shares with her audiences, after days of seeing a nearly identical landscape, and starved of data by the austere surroundings and the white noise of the wind, the brain begins to fill in the gaps with hallucinations. In addition to open conversations with the Sun, there could be a distinct aroma of freshly baked bread that would accompany her skiing for hours at a time, or there was a sensation of floating as she slept. But it was the visual apparitions that seem most remarkable by comparison. Sastrugi often transformed themselves into mountain ranges, floating hands would either audibly applaud her progress or point the way forward, and perhaps most amusing of all were the visions that came during whiteouts. On one of those vacuous days, out from the disorienting blankness, a small bald-headed man emerged from his hiding place, evidently disturbed by the cavalier passerby. No sooner was he gone that another little figure appeared, this one riding a tiny Triceratops dinosaur. More belligerent than the first, the second man shook his fist in annoyance at Felicity as he galloped off into the blizzard on his bonsai Late Cretaceous "steed." Paradoxically, these scenarios seemed perfectly normal, even rational in the context of Antarctica's isolation. Situation normal—likely a reflection of the desire for companionship compounded by the profound level of exhaustion.

Long after her return home, Felicity would feel a sense of guilt for not conversing with the Sun on a daily basis, and she admits that on occasion she still gives the Sun a quick covert wave to assure it she hasn't forgotten its steadfast loyalty and protective friendship.

As Felicity and her Pole of Cold expedition team continue on their journey across Arctic Scandinavia and Siberia through the months-long darkness of the polar night, we can only wonder whether there will be equivalent conversations with the Moon and Orion or the dancing swashes of the Northern Lights. And if there are, what languages will they speak? ¶

Duck Down and Thermostats in an Interconnected World

by Moki Kokoris

It was in 1913 that American filmmaker and explorer Robert Joseph Flaherty first landed on the Belcher Islands in what is now the Qikiqtaaluk Region of Nunavut, Canada. Though most of the 30,000 feet of footage he took with his hand-cranked motion picture camera was lost in a fire, the Inuit culture he encountered in the Belchers intrigued him deeply enough that he was inspired to make a new film that would document the life of a traditional Inuit family. The dramatic interpretation *Nanook of the North* (1922) went on to become the first commercially successful feature-length documentary, for which Robert J. Flaherty is known as the father of the documentary film.

When viewed on a satellite image, the archipelago of 1,500 separate islands that comprise the Belcher Island chain gives an appearance of marbled paper. Composed of folded meta-sedimentary rock, the grouping collectively covers an area of 5,000 square miles in southeastern Hudson Bay, approximately 1,160 of which are dry land. The archipelago's 800 residents reside in the hamlet of Sanikiluaq on the northern coast of Flaherty Island, one of the four larger islands.

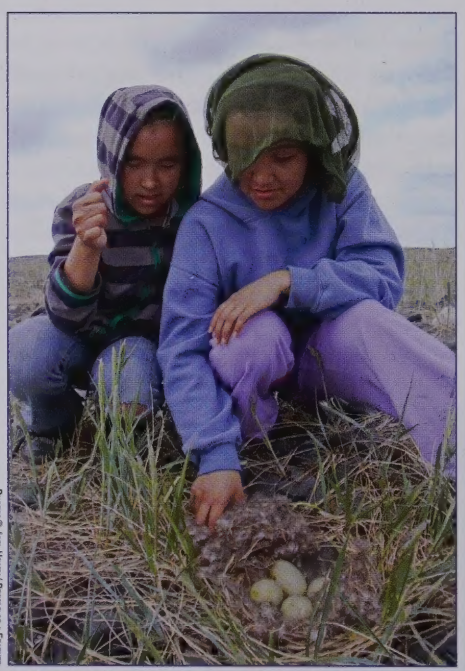


Photo: © Joel Heath / People of a Feather

With no caribou on their islands, the Inuit of the Belcher Islands have relied on Eider ducks for food and clothing for generations. After finding an Eider nest, Sanikiluaq residents Dora and Rebecca Kavik collect small clumps of down that will be used to fill warm winter parkas.

As in many regions across the Arctic, there is no agriculture or farming on the chain due to the lack of arable soil. Therefore, the residents of Sanikiluaq rely mainly on subsistence hunting, following age-old Inuit traditions. Hunters supply food not only for their own families but for the entire community. The waters around the islands support a wide variety of fish including Arctic char, capelin, lumpfish and cod. Predominant wildlife that provides food, clothing and other necessities consists of beluga whales, ringed and harbor seals, walrus and large populations of the Common Eider duck. Even today, the Inuit depend heavily on the fish and seals, but it is with the Eider that these indigenous people have the strongest historic relationship.

> One of the unexpected biological effects [of nearby large-scale hydroelectric projects] is that hunters report that carcasses of the seals and belugas they dispatch sink before they can be retrieved.

Many of the low-lying islets provide prime nesting grounds for the Eiders. The strong water currents around the islands in the winter create ice-free areas, called polynyas. Because these areas of open water allow the sea-ducks to dive for urchins and mussels on the sea floor throughout the year, the Eiders remain in the Belchers through the winter instead of migrating south. They are an important resource for the Inuit who continue to rely on the ducks for their livelihood. Eiders are harvested for their meat to this day, and until only one generation ago did the Belcher Inuit still use their feathered skins to make their coats. Traditionally, men wore anoraks made only from Eider drakes (mainly black with white accents), and women wore amautiit constructed exclusively from Eider hen skins (speckled brown). More recently, along with a few eggs that are collected for personal sustenance, small clumps of down are sustainably gathered from the Eiders' nests during nesting season with which the Inuit fill contemporary fabric parkas.

Seriously troubled by major die-offs of thousands of Eider ducks during typical winters during the 1990s, the Belcher Island community contacted the Canadian Wildlife Service. It was eventually determined that the large-scale hydroelectric projects built near James and Hudson bays in the 1970s were the root cause. Little was known at the time about the impacts these dams would have on the surrounding ecosystem. Initially deemed to be a "green" alternative to coal-fired and diesel power generation, hydroelectric plants require the damming of rivers and collection of spring runoff. To power the turbines, the water from these reservoirs is released during the winter months when energy demand is highest in the regions using the electricity. Research now shows that as it enters the saltwater, the released freshwater decreases salinity in the bay, causing the bay to freeze up more quickly over a much larger area, often catching wildlife by surprise. These freshwater plumes result in frequent entrapments and mass die-offs of not only Eider ducks but also belugas.

Moreover, because most species of phytoplankton are adapted to narrowly specific marine environments and conditions, even minor changes in salinity levels, currents and sea ice conditions can create major disruptions in the food chain. One of the unexpected biological effects is that hunters report that carcasses of the seals and belugas they dispatch sink before they can be retrieved. This phenomenon is a principal example of the cumulative impact the hydroelectric dams can have on animal development. The food sources of seals and belugas determine the composition of their body fat. Seals, for example, have different buoyancy in freshwater than they do in seawater. The bodies of the killed seals sink and come to rest several meters below the surface in the water column beneath the freshwater plume. Belugas that have a thinner layer of blubber due to the imbalance in their food supply simply drown and are lost altogether. Additionally, thinning sea ice and increasingly unpredictable weather patterns render hunting too dangerous and, therefore, make the Eider a relatively easier-to-obtain quarry.

Continued on page 12

Maria Kudluarok in a traditional Eider skin parka (amautik) created for the *People of a Feather* film. (Photo Credit: © Joel Heath / People of a Feather)

Traditional igloo life on the Belcher Islands, where Eider duck clothing was the key to staying warm. For the first time in many years, three generations are wearing traditional clothing, created for the *People of a Feather* film.
(Photo Credit: © Joel Heath / People of a Feather)

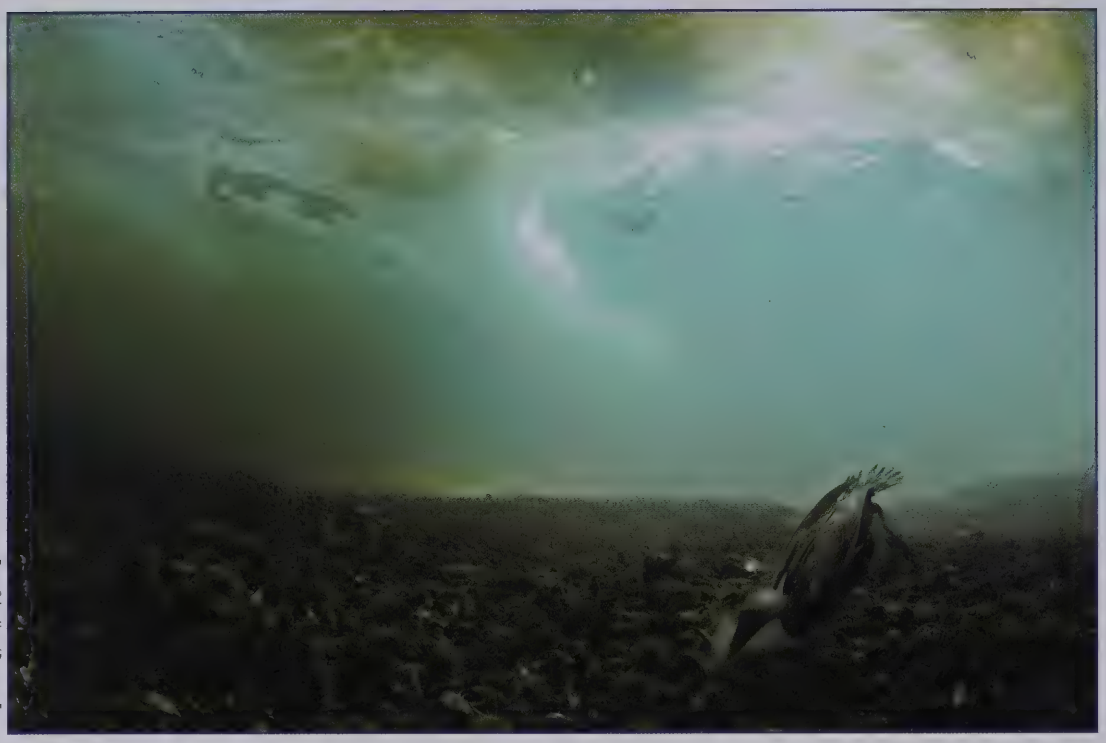


Photo © Joel Heath / People of a Feather

View from the bottom of a polynya, an 'oasis' of open water in the sea ice maintained by strong currents. An Eider duck is feeding on mussels and sea urchins while others dive from the surface above.

As a direct consequence of hydroelectric industry practices, the plight of the Common Eider population has been no less grave. In an attempt to remedy the growing problems, a group of Inuit and Cree leaders traveled to New York in 1996 to lobby against further hydro-development. Their monumental First Nations rights achievements at the time have now become tenuous as energy demand and pressures to establish new hydro projects increase.

In collaboration with the Canadian Wildlife Service, Canadian ecologist Joel Heath came to Sanikiluaq in 2002, to study the ducks and create a community-based monitoring program that would combine the collected scientific data with traditional knowledge. Not only would such a process empower the community, but it could help the Inuit people who are directly impacted to address the environmental changes in a more comprehensive way.

While researching the ducks and their habits, Joel developed new time-lapse monitoring technology and an underwater camera system that captured the first ever images of Eiders diving below the sea ice. During this time, he also compiled a series of stories in which the local Inuit shared their concerns about the troubled future living with the hydroelectric dams that power eastern North America in such close proximity. This seven-year effort became Joel Heath's first feature documentary film, called *People of a Feather.*

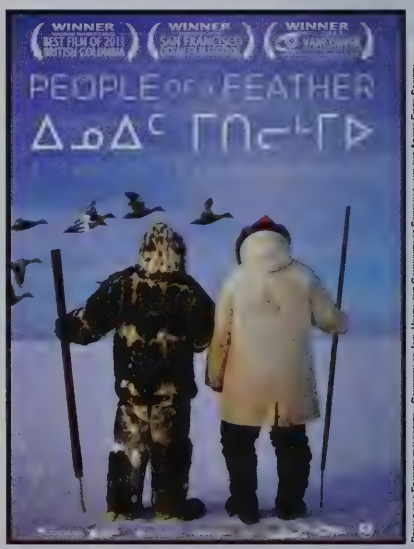
Evidence shows that the simple act of turning on a light switch in Quebec or adjusting a thermostat in a New York City apartment creates a cascade of cumulative consequences on the ecology of Hudson Bay.

To better understand the environmental impacts, the Flaherty Island hamlet formed the Sanikiluaq Environment Committee which, in the early 1990s, conducted a three-year survey to record what indigenous hunters and elders knew about Hudson Bay and what changes they were observing. Their observations were published in the book *Voices from the Bay: Traditional Ecological Knowledge of Inuit and Cree in the Hudson Bay Bioregion.* Joel Heath's *People of a Feather* film and the subsequently established Arctic Eider Society support and further build on their predecessors' objectives. In the director and filmmaker's own statement, "Motivated by deep personal relationships and intimate first-hand experience, the film presents an engaging story of life in the Arctic through the eyes of Inuit. Dialogue among characters establishes context, creating an open discussion of critical socio-environmental issues with limited voiceover. Versatile cinematography (Canon 7D) and unprecedented access provide stunning visuals, capturing uninhibited moments, reflecting modern life while maintaining deep roots in the Flaherty tradition. The drama is carried by the unique rhythm of the Arctic seasons, juxtaposing past and present revealing increasing discord as we travel through the seasons that are ultimately being disrupted."

Evidence shows that the simple act of turning on a light switch in Quebec or adjusting a thermostat in a New York City apartment creates a cascade of cumulative consequences on the ecology of Hudson Bay, its sea ice and currents, salinity levels, and ultimately on the complex dynamics of the Gulf Stream and thermohaline circulation that controls climate patterns around the globe.

It may not be possible to halt expansion of the hydropower industry, but "the eyes of a remote subsistence culture challenge the world to find energy solutions that work *with* the seasons." The future of the changing environments and economies depend on it, and the fate of the Common Eider and its feather-clad human partners will be much less uncertain.... ¶

For more information, visit these websites: http://www.peopleofafeather.com/ and http://www.arcticeider.com/



People of a Feather film poster - Courtesy of Joel Heath, the Community of Sanikiluaq, and the Arctic Eider Society

New Arctic Island Discovered

http://news.discovery.com, 25 September 2013, by Gayathri Vaidyanathan—The Russian Navy has confirmed the presence of a new island in the Arctic, which would increase the number of islands in the Franz Josef Land archipelago to 192. The report was published in the Russian news service *RIONOVOSTI.*

The archipelago—named after an Austrian emperor—is among the last true frontiers. Even Google maps can't zoom in close. The ice-covered islands resemble a white smattering of freckles near the Norwegian island of Svalbard below the North Pole. Fjords and sounds surround the islands, with water depths exceeding 250 meters. The waters are covered in sea ice for nine months a year. More than 85 percent of the islands are made up of glaciers. A forbidding place, to be sure.

It is a remoteness that men (and a few women) attempted to conquer in the early days of Arctic exploration. Franz Josef Land was officially discovered in 1873, and became a base for a number of expeditions.

The British explorer Frederick George Jackson traveled to Franz Josef Land beginning in 1894 and arrived on the Northbrook Island, the southernmost of the archipelago. He settled at so-called Camp Flora, with the goal of exploring the archipelago and collecting rocks and fossils. His collections revealed to the British Geological Society that the islands were of volcanic origin (as opposed to continental).

In 1896, Jackson suddenly saw a man not of his party on the island: "a tall man, wearing a soft felt hat, loosely made, voluminous clothes and long shaggy hair and beard, all reeking with black grease."

It was the famous Norwegian explorer Fridtjof Nansen. Nansen and Hjalmar Johansen had embarked in 1893 on an attempt to reach the North Pole.

They had made it farther north than any explorer had in their day, before weather conditions forced a retreat. The men walked for months, fending off polar bears and walruses, and not knowing exactly where they were, before reaching Northbrook Island.

For his part, Nansen, not having heard a human voice for three years, felt his heart beat and blood rush to his brain, as he describes it in his book.

They soon recognized each other and Nansen and Johansen were able to secure passage home with Jackson.

So, Northbrook Island occupies an important place in annals of Arctic exploration.

In 2006, Arctic explorers suggested that Northbrook had split into two, after they found the isthmus connecting its eastern and western halves eroded into the sea.

The Russian Navy confirmed on Monday that indeed a narrow strait separates what is now two islands, and a new name for one of them will be given soon by a government commission, according to *RIONOVOSTI.* ¶

PHOTO COURTESY NEWS.DISCOVERY.COM

Famous Norwegian explorer Fridtjof Nansen who, with Hjalmar Johansen, embarked in 1893 on an attempt to reach the North Pole

Tired puppies ...

Not-ready-for-prime-time sled dogs enjoying a leisurely afternoon near Ilulissat, Greenland. (Photo: © Thomas Nørby Mogensen)

Chukchi Polar Bears Thriving as Arctic Ice Recedes

http://newsheartland.org, 7 October 2013, by Kenneth Artz—The U.S. Fish and Wildlife Service reports polar bears in the Chukchi Sea are growing larger in size and becoming healthier as Arctic sea ice recedes. The bears are thriving even though the Chukchi Sea is one of the areas where Arctic sea ice has receded the most in recent years.

The Chukchi Sea separates Alaska and Russia. The USFWS reports Chukchi polar bears are gaining size and appearing healthier in recent years as Chukchi sea ice recedes.

Real-world testing ground

The Chukchi Sea provides an important real-world illustration of the impacts of receding sea ice on polar bear populations. Chukchi Sea ice receded twice as much during the past 20 years as the neighboring Southern Beaufort Sea in the Arctic Ocean along Alaska's northeastern coast.

Outperforming their neighbors

According to the USFWS study, Chukchi Sea polar bears of both genders are heavier than polar bears in the neighboring Southern Beaufort Sea, where there is more sea ice. The weight difference is especially pronounced among male polar bears, USFWS reports.

Chukchi Sea polar bears' body weight and overall health either remained stable or improved, according to the study.

Chukchi Sea female polar bears have more cubs than Southern Beaufort Sea polar bears, the study observes.

The USFWS reports Chukchi Sea polar bears have more access to prey as sea ice recedes. This contradicts assertions by global warming activists that receding sea ice is forcing polar bears to starve or subsist on less food.

Science trumps alarmism

Marc Morano, publisher of the Climate Depot website and author of the 2008 U.S. Senate Polar Bear Report, says reality is trumping unsupportable alarmism about global warming and polar bears.

"This new study adds further evidence that far from being endangered, polar bears are thriving in the Arctic. Indigenous people recognize that polar bear numbers are going up, and now even official estimates are reflecting that," said Morano.

"It now seems that the greatest threat polar bears may face from global warming is from the failed climate model predictions claiming they are doomed," he added.

More access to prey

Evolutionary biologist and polar bear expert Susan J. Crockford, an adjunct professor at the University of Victoria, British Columbia, confirmed polar bears are doing quite well with less Arctic sea ice.

"A longer ice-free period in summer has increased the number of ringed seals because summer is the primary feeding period for seals. This means more seal pups in the spring, which is the primary feeding period for polar bears," Crockford explained. "Chukchi bears are not feeding longer in the spring; they are just eating more. Apparently, this was not what the researchers expected.

"Before climate change became the cause du jour, it was pretty clear that polar bears in the Canadian portion of the Beaufort suffer because of the thick ice that occasionally develops there in the spring," Crockford noted. "It's a phenomenon unique to the Eastern Beaufort. In other words, there is ample evidence that too much ice in the spring is much worse for polar bears than less ice in the summer."

Crockford says this study casts doubt on gloom-and-doom predictions about the demise of polar bears by proponents of alarm over manmade global warming. ¶

Protesters Hit a Bad Patch

NYT headline above the fold: 'Activists Feel Powerful Wrath as Russia Guards its Arctic Claims'

by Cliff Bekkedahl

The Greenpeace ship *Arctic Sunrise* is being held in Murmansk along with its 30-person crew cum protestors who were seized on the high seas after staging a protest against oil exploration in the Arctic. All thirty are housed in separate cells for 23 hours a day as they await trial originally for charges of piracy. The charges have been reduced to hooliganism, a lesser charge but one that carries a penalty of up to seven years. A unique aspect of this seizure is that 23 of 30 aboard *Arctic Sunrise* hail from a total of 18 nations.

According to Greenpeace and relatives who have been allowed to visit, the prisoners have not been mistreated and have access to lawyers and diplomatic representatives of their home country. Nonetheless, complaints of prisoners include lousy food, cold cells, constant smoking by other prisoners and a dread of the coming six weeks of darkness about to fall on Murmansk.

Piracy seems to be the charge du jour*!*

Paul Watson, founder of Sea Shepherd Conservation Society, argues in a U.S. appeals court that "We're not pirates." It isn't clear who called them that, but Watson is convinced that the Japanese are behind this accusation.

Japanese whalers have accused them of violating a court order prohibiting the Sea Shepherds from approaching their whaling ships closer than 500 yards.

They claim that Sea Shepherds violated that order 10 times earlier this year, and they are asking the court to impose a $100,000 fine for each event.

Watson is bouncing around the world to avoid extradition to Germany to answer charges lodged there at the behest of the Costa Rican government for "endangering a fishing crew in 2002." Watson claims that "All of this is engineered by the Japanese."

It ain't over yet—his organization plans to challenge the Japanese whaling fleet again next year. ¶

Editors note: Media reports just prior to *The Polar Times* being handed to printers say all 30 protestors from *Arctic Sunrise* have been released by Russians.

Radical New Icebreaker Will Travel Through the Ice Sideways

***Gizmag* (http://www.gizmag.com/), 2 August 2013, by Ben Coxworth**—Given that icebreakers clear a path for other ships by traveling through the ice head-on (or sometimes butt-on), then in order for one of them to clear a wider path, it would have to be wider and thus larger overall ... right? Well, Finland's Arctech Helsinki Shipyard is taking a different, more efficient approach. It's in the process of building an asymmetric-hulled icebreaker that can increase its frontal area, by making its way through the ice at an angle of up to 30 degrees.

Arctech refers to the ship as "Icebreaking rescue vessel NB 508," although according to a report in New Scientist, it's also known as the *Baltika*. It's being built for the Russian Ministry of Transport, and will be used not only for icebreaking, but also for rescue and oil spill cleanup duties in the Gulf of Finland.

The ship will be moved along by three propulsors on its underside, each one of which can rotate 360 degrees. This means that it will have no problem moving forwards, backwards, or sideways. By hitting the ice at an oblique angle, it will be able to clear a 50-meter (164-foot)-wide path—not too shabby, considering the NB 508 itself will have a breadth of only 20.5 m (67 ft), and a length of 76 m (249 ft).

Three diesel generators will provide a total power of 9 MW and a total propulsion power of 7.5 MW. That should be enough to send it through ice up to 0.6 meter (2 ft) thick when moving sideways, or 1 meter (3.3 ft) when going bow- or stern-first.

The NB 508 was designed by Aker Arctic Technology, and has been under construction at Arctech since June 28. It's scheduled for delivery to the client by next spring (Northern Hemisphere). ¶

Russia Lays Down World's Largest Icebreaker

http://rt.com, 5 November 2013—Russia has started building the world's largest universal nuclear-powered icebreaker capable of navigating in the Arctic and in the shallow waters of Siberian rivers. The unique vessel will further increase Russia's dominance in the region.

The 173m ship is being built by the Baltiysky Zavod shipyard in St Petersburg and is planned to be completed by 2017. Once finished, the ship will be 14 meters longer and 4 meters wider than the current record holder, *50 Year Victory*, that is 159 meters long and 30 meters wide.

"There is no doubt that this work will be completed on time and in good quality," said the head of United Shipbuilding Corporation, Vladimir Shmakov.

In August 2012, Atomflot—a sister company of Rosatom—signed a 37-billion-ruble ($1.2 billion) contract to begin construction of a "universal" vessel. According to the general director of Atomflot Vyacheslav Ruksha, the Icebreaker LK-60 Project 22220 vessel is likely to be called the *Arctic*.

Powered by two "RITM-200" pressurized water reactors the *Arctic* is being built to generate 175MWe. Its efficiency and power allows the new model to crack ice fields three meters thick.

The *Arctic* will be granted the highest ice class—"9"—meaning the ship will be able to break ice in the Arctic area all year round.

The new design will allow the icebreaker to alter its draught, or the depth of the loaded vessel in the water between 8.5 to 10.8 meters. This will enable the ship to navigate the shallow waters of Siberian rivers as well as the Arctic and tow ships of up to 70,000 tons.

Atomflot has also announced an 80-million-ruble ($2.5 billion) tender for the construction of two similar class icebreakers which will be announced in the near future, and their delivery to the Navy is expected sometime between 2018 and 2020. The main objectives of these new icebreakers would be servicing the Northern Sea Route and carrying out various expeditions to the Arctic.

Constructions of new icebreakers are important for Moscow as Russia is continuing to collect data to expand its continental shelf borders in the Arctic. The US, Canada, Norway, Denmark and Iceland have also announced claims to exclusive economic rights on the Arctic shelf. Russia argues that "Lomonosov Ridge" is an extension of Siberia's shelf, and therefore belongs to Russia exclusively.

Russia, the only country with nuclear powered icebreakers, currently has five vessels cruising the Arctic, built between 1985 and 2007.

Russian companies also use *Vaygach* and *Taymyr*, two shallow-draft nuclear-powered icebreakers, to navigate Siberia's frozen rivers. ¶

Commentary by Capt. Lawson Brigham, U.S.C.G. (Ret)

The Russians are planning new and powerful icebreakers to replace most of the fleet that was built during the era of the Soviet Union. Diesel-electric (conventional) powered icebreakers are currently being built in Russia, and this new "super" nuclear-powered icebreaker—to be constructed in St. Petersburg—will replace several of the earlier nuclear ships. Although the new ship is longer and has a wider beam compared to all other icebreakers, it is also dual-draft so that it can operate in the shallow Yenisey and Ob rivers. The principal reason for this build-up of new icebreaker capacity is the opening of Russia's Northern Sea Route to expanded commercial traffic. Russia sees the NSR as a "national waterway," and it is a transportation artery to moving Russian Arctic natural resources to global markets ... eastbound in an extended "summer" navigation season and westbound year-round out of the Russian Arctic.

While there is less Arctic sea ice in the summer months along the Russian maritime Arctic, the NSR Administration hopes to extend the navigation season to six months in the years ahead. Therefore, there is a need for a robust polar icebreaker fleet for convoy escort, a system Russia has learned to use for moving commercial ships in ice-covered waters. The larger size of the ice-capable bulk carriers, tankers and LNG carriers sailing the NSR mandates that the new escorting icebreakers have a maximum beam. Nuclear power for these ships also allows unlimited endurance (for several years before refueling) in the icebreaking escort role and for an effective, visible presence of the Russian Federation in the Arctic. This presence is for control, response, scientific and potentially law enforcement operations. However, these icebreakers are expensive ships, as evidenced by the $1.2 billion price tag of the new nuclear icebreaker, and it is highly plausible Russia will have fewer nuclear and non-nuclear icebreakers than it had at the end of the USSR. ¶

New York Air National Guard's 109th Airlift Wing Launches Annual Antarctic Mission

Once again—the 109th is on its way south

www.nationalguard.mil, SCOTIA, N.Y., 22 October 2013, excerpted from story by Tech Sgt. Catharine Schmidt, 109th Airlift Wing, New York Air National Guard—The 109th Airlift Wing kicked off its 26th season in support of Operation Deep Freeze on Oct. 18 as Airmen and LC-130 Hercules aircraft began their journey to the South Pole.

An LC-130 assigned to the 109th Airlift Wing leaves Stratton Air National Guard Base for Antarctica on Oct. 18, 2013.

Air National Guard photo by Master Sgt. Willie Gozan/Released

Despite the obstacles each season brings with the extreme weather conditions in Antarctica, crews are always prepared to complete the missions they have set out to do in support of the National Science Foundation.

A total of six ski-equipped LC-130 aircraft will be deployed this year from October to February, the typical on-continent Antarctic flying season.

These aircraft will support the National Science Foundation's research, moving supplies and people to field camps across the continent and to the South Pole station.

About 120 Air National Guard members will be deployed at any one time to Operation Deep Freeze, with a total of about 700 personnel rotations occurring over the entire season.

"We fully expect to meet all the mission requirements NSF sets forth for us," said Maj. Steven Slosek, a navigator who will be part of this year's ODF season, his fifth season on the ice. "It's an extremely remote and austere environment, but the best part about being a navigator in Antarctica is the sense of adventure." ¶

Coast Guard Icebreaker Deploys to Antarctica

***SEATTLE,* US Coast Guard, 4 December 2013**—Coast Guard Cutter *Polar Star* departed Coast Guard Base Seattle for Antarctica, Tuesday, in support of Operation Deep Freeze for the first time since 2006 with the task of resupplying the National Science Foundation Scientific Research Station in McMurdo.

For more than 50 years, Coast Guard icebreaker crews have deployed to Antarctica in support of Operation Deep Freeze. They will assist by creating a navigable shipping lane through the layers of ice in McMurdo Sound. Approximately eight million gallons of U.S. fuel will be sent to McMurdo residents through the channel and be delivered to Winter Quarters Bay. This fuel allows the Station to remain manned and ready during the freezing winter months.

This past summer, CGC *Polar Star* conducted sea trials in the Arctic to test all of the ship's equipment and train the crew prior to embarking to Antarctica this winter. During the summer trip, CGC *Polar Star* spent weeks in the Beaufort Sea north of Barrow, Alaska, testing propulsion machinery, conducting emergency drills, and qualifying crewmembers in individual watch stations.

In preparation for CGC *Polar Star's* Deep Freeze Deployment, the crew overhauled many pieces of equipment from the bridge to the engine room and successfully completed a number of assessments to achieve their fully reactivated status.

Polar Star is a 399-foot Polar Class Icebreaker with a 140-person crew, homeported in Seattle. The cutter is recently out of a three-year, $90-million overhaul, which is part of the Coast Guard's plan to reactivate the heavy icebreaker. ¶

Acquisition of the Charles J.V. Murphy Papers

The Byrd Polar Research Center Archival Program (BPRCAP) is pleased to announce the recent acquisition of the Charles J.V. Murphy Papers.

Charles Murphy was a CBS correspondent who accompanied Richard Byrd on his second expedition to Antarctica (BAE II), 1933-1935. Murphy played a major role in crafting the public persona of Byrd, and it was important to Murphy that Byrd's image as a hero be maintained. Murphy wrote the scripts for the weekly radio shows that were broadcast from "Little America." Byrd came to regard Murphy as a trusted confidant, and even acted as best man at the reporter's wedding.

Following the South Pole adventure, Murphy played a pivotal role in the writing of Byrd's account of the expedition. He would also write his own biography of the man he so admired, "Struggle: The Life and Exploits of Commander Richard E. Byrd." In addition to ghostwriting for Byrd Murphy put his journalistic talents to work in books "written by" the Duke and Duchess of Windsor. While spending the remainder of his career as a writer for Fortune Magazine, Murphy also published a number of books under his own name, including the children's story, "Little Toot." He died in 1987 at 83.

The collection contains radio scripts, correspondence, notes and Murphy's daily journal writings. Since Murphy was Byrd's ghost writer, some original Byrd materials are found in this collection. It also includes letters from Murphy to his wife and children while he was on Byrd's second expedition to Antarctica. The collection was received in two accessions, one in 2011 and one in 2012. The materials were given by Edythe Holbrook, daughter of Charles J.V. Murphy and occupy 2.25 cubic feet. The complete finding aid for the collection can be found at http://rave.ohiolink.edu/archives/ead/OhCoUBP0022.

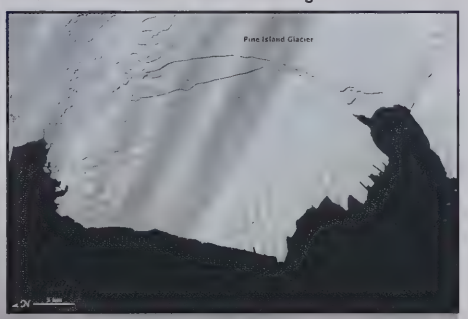
For more information about the Charles J.V. Murphy Papers, as well as any of the other polar collections held by the Byrd Polar Research Center Archival Program, please visit: go.osu.edu/polararchives or contact the Polar Curator, Laura Kissel at: kissel.4@osu.edu. ¶

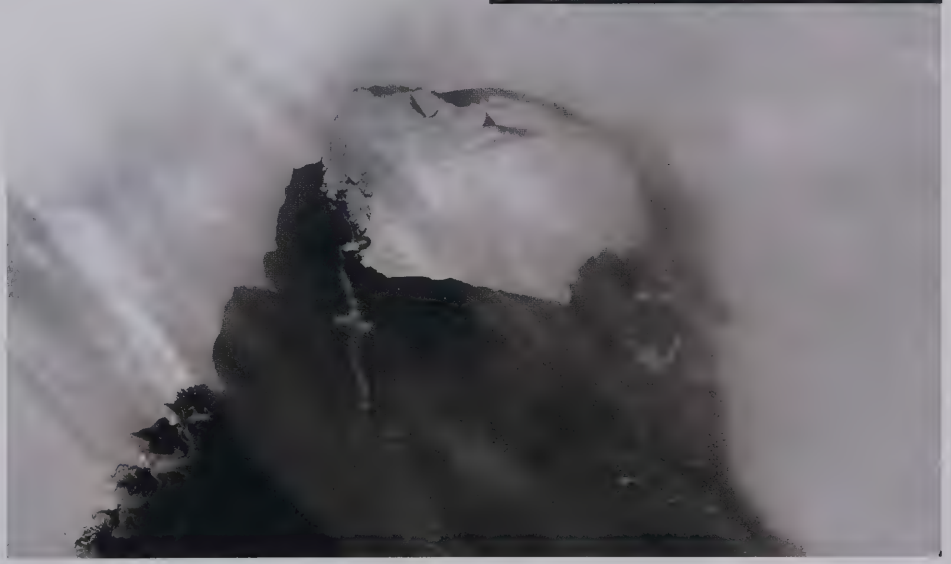
Pine Island Glacier, Antarctica

***NASA Earth Observatory,* modified**—Between 9-11 November 2013, a large iceberg separated from the calving front of Antarctica's Pine Island Glacier. Scientists first detected a rift in the glacier in October 2011 during flights for NASA's Operation IceBridge. By July 2013, infrared and radar images indicated that the crack had cut completely across the ice shelf. The resulting iceberg (B-31) is moving away from the coast. The two images shown here were acquired on 13 November 2013 (bottom) and 28 October 2013. Clouds and fog are apparent in the 13 November image. Iceberg B-31 is estimated to be 35 x 20 km (21 x 13 miles) in size. Readers can find the same images shown here plus accompanying text at http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=82392 (a link is on the word "download" to provide greater resolution).

The shelf of Pine Island Glacier (or PIG) moves seaward at about 4 km/year, twice as fast as its speed during the 1980's. PIG has attracted the attention of glaciologists because there is evidence that warmer seawater below the shelf triggered this recent acceleration and will cause further thinning of the ice shelf, retreat of the ice grounding line (where the grounded glacier stops and the floating ice shelf begins) and further glacier acceleration, all leading to an increase in global sea level. ¶

Pine Island Glacier before the calving ...





Photos courtesy NASA Earth Observatory

Whence Weather? There's an Accurate Answer ...

by Cliff Bekkedahl

"Grandpa, you told me weather comes from the North Pole. Teacher says that's wrong. She said weather comes from State College Pennsylvania."

Teacher's right! AccuWeather, the nation's largest weather authority, is located at State College, literally walking distance from the campus of Penn State University.

AccuWeather is the brain-child of Dr. Joel N. Myers who, in storybook fashion, sat at his kitchen table in 1962 and literally created an industry. Ah, yes, a Penn State graduate (B.S., M.S., Ph.D.), Dr. Myers took weather to a place never imagined—an international media company serving one and a quarter billion people. (***Editor's note:*** *Google Dr. Joel Myers for a fascinating account of his entrepreneurial and technological achievements.)*

The Polar Times was privileged to be a guest of AccuWeather last November and enjoyed a tour of their state-of-the-art headquarters and operations center.

Our quest was to explore the breadth and depth of meteorological involvement of the world's largest weather forecaster from weather emanating from the northern polar regions and its impact on North America, Western Europe and eastward. AccuWeather senior meteorologists were more than eager to explain their data gathering capabilities in the far north and the protocols used to translate this data into useful forecasts and information essential to a host of commercial, agricultural and service based enterprises.

The tour

Situated in a relatively new building, this facility is home to the largest number of forecast meteorologists in one location anywhere in the world. The Operation Center is a cavernous room the size of two basketball courts, with a ceiling of over 20 feet in an "open-space modality"—long tables and work stations defined by tens of dozens computer monitors. Over in one corner, again in the open, a television studio where TV weather persons, live or on tape, deliver their forecasts to stations nationwide. Nearby, small soundproof booths are clustered and manned on a time-based schedule, where radio announcers provide forecasts to hundreds of locations nationwide. Huge TV screens adorn the walls visible to everyone in the Center, displaying satellite images of weather masses moving across continents, while adjacent screens scale down such displays to specific localities.

One standout feature of the Operation Center was the absence of windows, which suggested that AccuWeather meteorologists did not want visitors accusing them of looking out the window to predict the weather. This feeble joke was mercifully repressed by yours truly.

As we departed the Operation Center, our tour guide, Bob Larson—a radio forecaster and long-time member of the AccuWeather team—introduced *The Polar Times* to three senior meteorologists who quickly connected with the mission and history of the American Polar Society.

One standout feature of the Operation Center was the absence of windows, which suggested that AccuWeather meteorologists did not want visitors accusing them of looking out the window to predict the weather.

Brett Anderson was the right guy to talk with about his specialty, Arctic weather. His duties included producing AccuWeather's "Climate Change" blog and AccuWeather's "Canada Weather" blog. Additionally, he and his cohorts, Paul Pastelok and Meghan Mussoline, study and utilize the Arctic Oscillation Index which tracks Arctic weather and helps forecasters predict the weather patterns across North America, Europe and Asia.

AccuWeather meteorologists serve a large segment of customers who want more than daily or short-term forecasts. This presents a major challenge to the AccuWeather team(s). They respond by constructing long term (three-month, six-month and annual) forecasts on a national or regional basis. This is a team endeavor, with various groups of specialists contributing their input and then working together to iron out differences and reach agreement on expected weather phenomena in various areas of interest. This is a rolling process, constantly being tweaked in response to actual happenings and the unexpected, which is a constant in any forecasting exercise. How well do they do? They're happy to say, "Damned well," and they have a growing and satisfied client base to prove it.

PHOTO COURTESY OF ACCUWEATHER

Dr. Joel Myers, founder and president of AccuWeather, gives a speech at AccuWeather's 50th anniversary celebration on Thursday, (Sept. 1, 2013.)

Not surprisingly, Antarctic weather was of lesser concern in the AccuWeather world inasmuch as commercial opportunities for their services is minimal in the far reaches of the southern hemisphere.

Teacher's right ... and a visitor coming away from AccuWeather has seen not only an amazingly successful business enterprise, but has also been privileged to meet some of the nation's leading authorities in the science of Meteorology. ¶

Matthew Henson Was Right-Hand Man of Arctic Exploration

***courier-journal.com*, 7 August 2013, by Frank Danniels III**— "There is a general rule that every member of the expedition, including the sailors, must take a bath at least once a week, and it is wonderful how contagious bathing is. Even the Esquimos catch it, and frequently Charley has to interrupt the upward development of some ambitious native, who has suddenly perceived the need of ablutions, and has started to scrub himself in the water that is intended for cooking purposes. If the husky has not gone too far, the water is not wasted, and our stew is all the more savory."

Matthew Henson was the right-hand man for America's explorer Robert E. Peary, and his stories lend detail to the history of Arctic exploration. And those stories are all the richer for the subsequent shabby treatment that he received from Peary.

Booker T. Washington captured the working relationship between the two men in his introduction to Henson's diary of the 1908 North Pole expedition, quoting Peary:

"Matthew A. Henson, my Negro assistant, has been with me in one capacity or another since my second trip to Nicaragua in 1887. I have taken him on each and all of my expeditions, except the first, and also without exception on each of my farthest sledge trips. This position I have given him primarily because of his adaptability and fitness for the work and secondly on account of his loyalty. He is a better dog driver and can handle a sledge better than any man living, except some of the best Esquimo hunters themselves."

And as Donald MacMillan, an explorer who accompanied several of Peary's expeditions, wrote in the foreword to *Dark Companion*, a biography of Henson by Bradley Robinson, "Peary knew Matt Henson's real worth (he) was of more real value to our Commander than Bartlett, Marvin, Borup, Goodsell and myself all put together. Matthew Henson went to the Pole with Peary because he was a better man than any one of us."

However, after the "success" of the expedition, Peary shared no credit with the man who made the final push possible and was probably the first of the team to reach the North Pole.

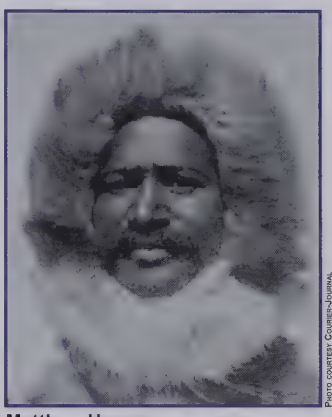


Photo courtesy Courier-Journal

Matthew Henson

Henson was born on Aug. 8, 1866, on a farm that his parents, both freeborn, sharecropped in Charles County, Maryland. The family moved to Washington, D.C., to find better-paying work, but his mother died when he was 7 and his father left him in the care of relatives, who saw to his schooling.

When he was 12, Henson signed on the merchant ship "Katie Hines" as a cabin boy. He was promoted to able-bodied seaman after his first voyage, and stayed with the ship for years, becoming a favorite of the captain, who taught him navigation and encouraged him to read. He sailed with the trader to China, Japan, Africa, the Philippines and Europe, through the Mediterranean and into the Black Sea, before he returned to America.

In 1887, Henson was back in Washington working as a store clerk, where he met Peary, then a young Navy officer about to return to Nicaragua and resume a survey for a canal connecting the Caribbean Sea to the Pacific Ocean (the Nicaragua canal project lost out to the French attempt to cross the Isthmus of Panama). It was during Peary's duty in the sweltering tropics that he determined that he would become the first to reach the North Pole.

Peary, like the Hines' captain before him, saw something special in Henson and hired him to accompany the survey expedition; the relationship lasted 20 years and numerous expeditions.

Henson's seamanship skills were just a few of the many abilities he brought to Peary's quests, and Henson embraced the challenges and dangers they met. He learned the languages and culture of the Eskimo, and lived with them for a year, where he fathered a child with an Inuit woman (Peary also had an Inuit child).

Though ignored by Peary for years, other explorers began making up for the slights. The Explorer's Club invited him to membership, though almost 30 years after the famous expedition.

He died on March 9, 1955. ¶

Researchers Identify Lowest Temperature Limit for Basic Life on Earth

***Nature World News*, 28 August 2013, by James A. Foley**—New research from the British Antarctic Survey suggests that the lowest possible temperature at which simple life can survive is -20C.

The researchers, who published their work in the journal *PLOS One*, found that as the water temperature in which they studied single-celled organisms was lowered further below freezing, the water within the organisms began to seep out to form more ice, leaving the cells not only dehydrated, but vitrified into a glass-like state where reproduction is not possible. When cells are unable to reproduce, the scientists considered them no longer living, even though they can be brought back to life by raising the temperature.

Because reproduction ceases at temperatures below -20C, the researchers contend that -20C is the lowest temperature limit for basic life on Earth.

In their experiments, say the researchers, this state of vitrification is similar to the state of dried-out plant seeds.

"The interesting thing about vitrification is that, in general, a cell will survive, where it wouldn't survive freezing; if you freeze internally you die. But if you can do a controlled vitrification, you can survive," said lead study author Andrew Clarke of British Antarctic Survey in a news release by the Natural Environment Research Council. "Once a cell is vitrified it can continue to survive right down to incredibly low temperatures. It just can't do much until it warms up."

After testing a number of single-celled organisms, all of which vitrified below -20C, the researchers contend that unicellular life simply cannot grow below -20C, without exception.

The find helps explain why deep-freezing food can preserve it from getting moldy.

"We were really pleased that we had a result which had a wider relevance, as it provided a mechanism for why domestic freezers are as successful as they are," Clarke said. ¶

Early morning light on sea ice and grounded icebergs, Macey Island, Mawson Coast

© Copyright David Neilson 2012, from his book
Southern Light: Images from Antarctica,
reviewed in this issue on page 33.

Due South

by John Splettstoesser

From Wooden Huts to Zero-Emission Stations

The object of this article is to point out the major differences and improvements that have occurred in just over a century in dwellings from the period of exploration and early expeditions to the current design that exists in scientific stations in Antarctica. The wooden huts, of course, are those that remain from the history of exploration that began more than a century ago, consisting of those on Ross Island, Cape Adare, Snow Hill Island, and Cape Denison. Another era of wooden huts occurred during the time of the Falkland Islands Dependencies Survey (FIDS) in the Antarctic Peninsula area in the 1940s and 1950s and also several others established during Admiral Byrd's East Base on Stonington Island (1939–41) and those by Argentina and Chile in the 1950s. A quantum jump then occurred when preparations for the International Geophysical Year (IGY) began in the mid- to late 1950s. As of 2013 there are some 45 permanent (includes wintering) facilities of Antarctic Treaty Parties, which would be a massive task to provide design and structural details of each, so representative examples are shown here following the discussion on IGY and Later.

Historic huts, 1898 to early 1900s

A period of exploration began with expeditions that focused on achievement of the Geographic South Pole as well as exploring much of an unknown continent. The first of many wooden huts was that placed on the continent for an expedition led by Carsten Borchgrevink at Cape Adare in 1898–1900. The primary structure consisted of two buildings that are still there, although the roof has blown off one of them (Fig. 1). A close inspection of the outer walls reveals evidence of the incessant force of winds for more than a century. The exposed nails are in relief on the wood itself, about a centimeter or so above it because of the erosion of the wood by wind action. Only a few meters away from Borchgrevink's hut are the ruins of the hut occupied by members of Scott's Northern Party, 1911-13 (Fig. 1).

Note: To illustrate some of the huts and other structures mentioned I refer the reader to the 75th Anniversary issue of The Polar Times that was produced in 2013. Scott's Northern Party hut is pictured on p. 255, for example.

Photo by John Splettstoesser, Jan. 1991

Fig. 1. Borchgrevink's hut from the Southern Cross Expedition, 1898–1900. The wooden hut in the background is from Scott's Northern Party, 1911–13.

The three huts on Ross Island are directly related to exploration of the interior of Antarctica and also efforts to reach the Geographic South Pole, starting with Captain R.F. Scott's expedition in 1901-04 and the erection of a wooden hut on Hut Point Peninsula. A hut at Cape Royds was placed there for an expedition led by Sir Ernest Shackleton in 1907-09. Finally, a wooden hut at Cape Evans was placed there in 1910-13 for Scott's further exploration in the Ross Sea area, and also as a base for an attempt to reach the South Pole (p. 257 of anniversary issue). These huts and others mentioned are discussed in an article written for the Centennial of Historic Huts in Antarctica (Splettstoesser, 2000).

As the condition of the deteriorating huts became better known, two choices were apparent, one of which was to allow them to self-destruct under the force of wind and other elements of weather. The other option was to identify selected huts for the sake of preservation of major historic events related to exploration of the continent. Work on refurbishing selected historic huts began in 1987 on the four huts in the Ross Sea sector by the N.Z. Antarctic Heritage Trust, and in 1994 on four huts (Port Lockroy, Damoy, Wordie House, and Detaille Island) in the Antarctic Peninsula area by the U.K. Antarctic Heritage Trust. Background information on each Trust is in *The Polar Times, Anniversary Edition*, 2013, p. 255-257, and in *The Polar Times*, Jan. 2012, p. 16-17, respectively.

Port Lockroy is the flagship hut of the refurbishment because the extensive work done on it by a team headed by Dave Burkitt and his staff. It is the most heavily visited by tourists of all the huts as an example of what it was used for in its beginnings in the 1940s, plus the addition of an official British post office and souvenir shop, staffed during the austral summer by members of the U.K. Trust. The hut is located on Goudier Island, tucked in a sheltered harbor of Wiencke Island, and is noted every year for the most tourists landed in a season—19,248 in 172 landings in 2012-13, of a total of 23,305 tourists landed (IAATO Information Papers presented to Antarctic Treaty Consultative Meeting). The Port Lockroy facility is probably more comfortable now than it ever was in the 1940s and 50s. I first visited the hut in the 1980s and 90s when it was in disrepair with a hole in the roof, providing access by the snowy sheathbills (*Chionis albus*) that nested inside.

After careful inspection of the huts on Ross Island, it was noted that wind erosion of the outside surface of the wood structure was apparent, as well as damage from dissolved salt that is absorbed by wood, eventually weakening the wood through defibration. In addition to introducing preventive measures to combat these problems, the contents of the huts required cataloging of

Photo by John Splettstoesser, November 1989

Fig. 2. John Mercer inspecting food items on shelves in Scott's Discovery Hut, Hut Point Peninsula.

food and other supplies and restoring the interiors to resemble what the huts were used for some 100 years or so previously. Roofs were also strengthened as a means of protecting the huts from winds that might destroy them through time. Humidity in the huts also showed rust damage to tinned containers of food and other items, a situation that worsened as large numbers of tourists visited the huts in austral summers and moisture from breathing became an issue (Fig. 2). Environmental pollutants such as petroleum products, asbestos, and diverse chemicals were also left behind by the earlier occupants.

The 1940s and 1950s show another era in erection of wooden huts, particularly in the Antarctic Peninsula area. The Falkland Islands Dependencies Survey (FIDS) placed a number of huts to provide bases for surveying surrounding areas on foot and with the use of dog sleds over sea ice. Subjects of study included geology, biology, weather measurements and mapping of what was established as British Antarctic Territory related to a claim by Britain in 1908. One of the British huts is at Port Lockroy.

A group of huts established by the Australian geologist Douglas Mawson as a base for the Australasian Antarctic Expedition, 1911-14, is still there at Cape Denison, known as the windiest place on earth ("*Home of the Blizzard,*" after Mawson's book), but a replica was made of the main hut and placed at the wharf in Hobart for dedication in December 2013. The huts at Cape Denison have been worked on by an Australian Foundation, and after discussion of the options about their fate, whether to dig out the ice that filled the huts and made them impractical for retrieval because the ice provided the support to keep them intact, made a replica instead.

Finally, with a few exceptions of huts or shelters in the early 1900s not discussed here, the hut at Snow Hill Island, which was established there for the Swedish South Polar Expedition of 1901-04 led by Otto Nordenskjöld, has been refurbished within the last decade by the Argentine Government and is in good condition.

All the huts mentioned above and related historical plaques dating from the period 1898–1940s are designated as 'Historic Sites and Monuments, intended to preserve and protect from damage and destruction according to the terms of the Antarctic Treaty.

Succeeding huts were scattered about the Peninsula in the same time period by Argentina and Chile, also for local scientific investigations, but perhaps also as a result of claims by each country—Chile in 1940 and Argentina in 1942. These huts were all about the same design and size and many of them exist today as refuges and for recreation. For example, visitors to Petermann Island, south of Lemaire Channel, will have seen the Argentine hut Refugio Naval Groussac (1955), occupied occasionally by station personnel from Faraday (U.K.) and Vernadsky (Ukraine). [U.K. turned over Faraday to Ukraine in 1996.]

IGY and Later

Wooden huts continued as the mode of construction that followed with preparations for the IGY and later. The concept of U.S. participation in the IGY followed that of other IGY stations in that there was no intent of permanence or comfort in working and living spaces in Antarctica—no more than four years of service was expected of any station. Consequently, the seven U.S. IGY stations were conceived austerely and built as simply as possible. Because the short summer limited the period in which construction could take place, prefabricated buildings were employed wherever possible. The two principal types of structures used were Jamesway shelters and panel buildings. Modular buildings were developed especially for use in Antarctica and prefabricated under contract by the Clements Company, and thus became known as Clements buildings. After the 1956-57 season, the U.S. Army developed T-5 modular buildings, with a pitched roof (unlike the flat-topped Clements buildings) and different sizes of panels, which then became the standard panel structure used in Antarctica (Splettstoesser and Bresnahan, 1988).

When the U.S. Antarctic Program was continued for an indefinite period, attention was given to replacing the temporary camps with more functional and efficient stations. Most, if not all, of the earlier T-5 modular buildings were replaced by Robertson buildings at McMurdo and in later times by modern dormitory style buildings. Other stations, such as those placed on the ice sheet in the IGY, soon became drifted over and

Photo by John Splettstoesser, Jan 1991

Fig. 3. Refugio Naval Groussac, Petermann Island, established by Argentina in 1955.

Photo by John Splettstoesser, December 1983.

Fig. 4. Orcadas Station (Argentina), showing modern buildings on stilts to allow wind-driven snow to pass beneath them, and with pitched roofs.

buried in five years or less. The U.S. station at the South Pole and Byrd Station required different construction concepts as a means to combat the never-ending force of wind and drifting snow. A geodesic dome was constructed at the South Pole, dedicated in 1975 and lasting as a usable structure into the mid 2000s before being removed and replaced by structures placed on stilts that allow wind-driven snow to pass beneath buildings rather than drifting around and over them. An early example of this concept has been in place at Orcadas Station, occupied by Argentina on Laurie Island, South Orkney Islands since 1904, but with later modern structures in place today (Fig. 4).

As a means of reducing the problem with wind-driven snow covering structures placed on the surface, a new design for a station was constructed at a second Byrd Station, known as "New Byrd." Rather than place buildings on the surface, they were placed in trenches dug into the snow using Peter Snowmillers, with steel arches on top of the trenches, resulting in a negligible surface elevation that would not produce snow drifting or burial. The design was successful, but eventually, due to horizontal pressure caused by the removal of snow to produce the trenches, the steel arches began to buckle under the pressure, thus reducing the width of the trenches and impacting on the buildings.

Shore-based stations were often placed on ice shelves, which resulted in eventual calving of the seaward part of the shelf that took the station with it. Stations known as Little America (U.S.) experienced this history, as did others—South African as another example (SANAE).

In addition to environmental processes that involve ultimate loss of stations on icebergs, a major more immediate hazard exists with wooden structures and the vulnerability of the wood to the dryness of the air and fires. For examples, the FIDS base at Hope Bay had a fire in 1948 that killed two personnel who were trapped in the building. The Soviet station Mirnyy experienced a fire in 1960 that killed eight station personnel. More recently, an explosion and fire in 2012 at Comandante Ferraz, Brazilian station (see page opposite), killed two people. The entire structure of connected container units was removed, and a new station will be built in the same place.

Modern structures

A new international touring exhibition opened in July 2013 at The Lighthouse in Glasgow, Scotland (http://www.artscatalyst.org/projects/detail/ice_lab), featuring five imaginative designs for Antarctic research stations. The exhibition will run until 2 October 2013, after which it will move to the Museum of Science and Industry, Manchester, England (21 October 2013 to 6 January 2014). Following that, the exhibition will tour internationally. Inspired by the construction three years ago of the U.K.'s fully relocatable and caterpillar-like Halley VI, the British Council commissioned *Ice Lab*, an exhibit of modern Antarctic labs.

The exhibit consists of five projects, three of which exist in Antarctica presently, one due to open in 2014, and one a speculative design unlike any other in the past.

PRINCESS ELISABETH ANTARCTIC STATION brings Belgium back to Antarctica for the first time since its IGY station Roi Baudouin, which was decommissioned in 1967. The station is the first zero-emission station in Antarctica, being powered by wind and solar energy, has water treatment facilities, and a smart grid for maximizing energy efficiency. Further, it is located on a nunatak 200 km from the coast in Queen Maud Land, thus avoiding problems with an ice shelf location and potential for calving of an iceberg and loss of the station. Details of its design and photographs are in an article by Jeff Rubin in *The Polar Times*, July 2009, p. 4-5, Further information is on the station website at www.antarcticstation.org.

HALLEY VI STATION, British Antarctic Survey's first relocatable polar research station in the world, becoming fully operational in February 2013. The first Halley Station was constructed for the IGY of wooden structures, as was Halley II. The station is located on the Brunt Ice Shelf, floating on the Weddell Sea, and problems with drifting snow and burial of buildings as well as the possibility of losing the station through calving of an iceberg were issues to be dealt with in future designs. Ultimately Halley VI consists of a string of eight modules, each on stilts with skis so that the modules can be jacked vertically to deal with snow accumulation as well as relocation by towing individual modules to a new location. The location itself is well suited for atmospheric studies because it is on the auroral ring of the southern hemisphere, and also is famous for the discovery of the ozone depletion by Joseph Farman in 1985.

Photo by John Splettstoesser, November 1996.

Fig. 5. South African station built on an ice shelf that eventually buried the structures as a result of snow-drifting. John Splettstoesser and the sign of geographic cities are about 15-20 feet above the roofs of the earlier buildings. A new structure (SANAE IV) was built farther inland on a rock outcrop (Vesleskarvet) in Queen Maud Land to avoid subsequent losses of the buildings.

BHARATI RESEARCH STATION is India's third Antarctic station, consisting

of a modernist structure made from 134 prefabricated shipping containers. Wrapped in a special aluminum case, its extensive glazing offers panoramic views of its surroundings, and able to withstand strong winds and low temperatures. It is located in the Larsemann Hills, East Antarctica, within the vicinity of other stations, such as Progress (Russia) and Zhong Shan (China).

JANG BOGO is South Korea's second station, and when ready to open in 2014 will be the largest year-round base on the continent. (McMurdo, the largest station in Antarctica, is on Ross Island, not the continent itself.) The station's aerodynamic triple-arm design will provide resistance to the elements and accommodate 60 personnel during the busy summer season. It is located in Terra Nova Bay, near the Italian Station Mario Zucchelli.

ICEBERG LIVING STATION is a speculative design for a future research station made entirely from ice, to be constructed by holing out of a large iceberg, using caterpillar tractors that are traditionally used to clear snow. It negates the need to transport foreign materials to Antarctica, and will eventually melt, thus resolving the issue of removing it at the end of its life course. Aside from the other stations listed above, this one has interesting features with perhaps a shorter waiting list for personnel to occupy it.

To complement the exhibition, a varied events program will be presented of film screenings, talks and workshops in architecture, design and science. Photographer James Balog will present videos using time-lapse cameras to capture a multi-year record of the world's changing glaciers. Another feature will be a newly restored version of Herbert Ponting's official record of Captain Scott's expedition to the South Pole. ¶

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Brazil to Start Work on New Antarctic Base Next Year

***Earth & Climate* (http://esciencenews.com), 11 October 2013**—Brazil said Thursday it will start work early next year on a new Antarctic base to replace the one gutted by a 2012 fire.

The new station would be modern, newer and built with more resistant material, Navy Admiral Julio Soares de Moura told reporters as he unveiled the $54 million project.

Two military personnel died when a blaze ripped through the Comandante Ferraz base in Admiralty Bay, King George Island, near the tip of the Antarctic Peninsula in February last year. Around 70 percent of the base was lost in the fire.

A navy sergeant was charged with involuntary homicide and damage in connection with the accident.

The new base, which will shelter 64 people in summer and 34 in winter, will have 18 laboratories as well as seven isolated units for weather, ozone and atmospheric research, said architect Fabio Henrique Faria.

Next year an auction will be held to choose the company that will build the 200 modules that will make up the base, scheduled to be inaugurated in March 2015.

Scientists working under the Brazilian Antarctic Program use the base to study global warming, as well as coastal and marine ecosystems.

About 30 countries operate Antarctic stations. ¶

Comandante Ferraz, Brazilian station, prior to fire of 2012, consisting of container units.

What I Love Best About History—It Keeps Changing!

by Cliff Bekkedahl

It's Mawson time down under.

Centenary celebrations for Sir Douglas Mawson's Australasian Antarctic Expedition of 1911-13 are just about closed and here are a couple of items that surfaced in press clippings:

A book by Australian historian David Day, *Flaws in the Ice*, offers the notion that Mawson ate his last-to-survive companion, Xavier Mertz, after Mertz died in the struggle to get back to safety. As the theory goes, after the third member of their party fell to his death in a crevasse with dogs and a sled filled with their food, Mawson put himself and Mertz on short rations with their remaining supplies, fully expecting Mertz—the weaker of the two—would die, allowing Mawson to take nourishment from the remains of his dead comrade.

Another historian has chimed in calling this "unwarranted speculation."

But out of the foc'sle of the relief ship sent to retrieve Mawson's expedition, the sailing yacht *Aurora*, comes a heretofore secret diary kept by an obstreperous seamen, Bert Lincoln. Able-bodied Seaman Lincoln was told that below decks personnel were forbidden to keep diaries of the three months voyage to Antarctica. The rascal disobeyed, and his account was recently discovered and published.

The sailing vessel Aurora.

Seaman Lincoln was quite disgusted with many of ship's company who were "down in a cabin lazing and having a good time and leaving the work to us 6 seaman and boatswain…"

"Sunday Dec. 29th—The weather is still extremely bad and what with the dogs howling and sheep sculling about things are very lively…."

"If the people of Australia knew what was going on they would be disgusted at the whole affair."

Aurora had to pull away from Commonwealth Bay shortly before Mawson—now the sole survivor—reached the relief site, and the captain left six crewmen to find Mawson while the ship proceeded to Gauss Bay to retrieve Frank Wild and his party of eight. *Aurora* returned and picked up Mawson, and the six man team then sailed to Hobart.

Sheep "sculling about?" Have to think on that one…

Mawson's hut—that is, a replica thereof—has been installed on the Hobart waterfront. A three-piece structure to be joined together was designed to the exact dimensions of the original. The timber used was obtained from the same Scandinavian source used 100 years ago.

The replica hut will be used as a museum, and funds derived will go to restoration of Mawson's original hut in Commonwealth Bay. ¶

A Replica of Mawson's Hut Being Lowered Into Place Near Hobart's Waterfront

***AEDT*, 22 October 2013**—A piece of Antarctic history is being brought to life in Hobart with the installation of a replica of the hut used by Australian explorer Sir Douglas Mawson.

The full-scale wooden hut has been installed near the city's waterfront.

Hobart traffic was stopped to allow sections of the hut to be driven several hundred metres along the waterfront and then craned into place.

The replica is the exact dimensions of the original hut in Cape Denison on Commonwealth Bay used as the base for Mawson's 1911 expedition.

The timber has been sourced from the same Scandinavian supplier used more than 100 years ago.

Once the three sections have been joined together, items will be added to create a museum.

The Mawson's Huts Foundation hopes it will generate funds for further preservation work on the real huts.

The foundation plans to launch the replica hut museum on December 2, which marks 102 years since the Antarctic explorer set out from Hobart.

A geologist, Sir Douglas Mawson lead Australia's first major scientific expedition to Antarctica in 1911.

The expedition is credited with many scientific advances, particularly in cartography, meteorology, geology, biology and marine science.

Mawson is remembered for his courage as he struggled alone on the trek back to base following the deaths of his two companions in 1913. ¶

Polar Explorer Dr. Mackay's Medals to be Auctioned

***The Scotsman*, 6 Nov 2013, by Frank Urquhart**—The medals awarded to the Scottish doctor and heroic polar explorer who was one of the first three men to reach the magnetic South Pole are to go under the hammer at an auction house in London next month.

Dr. Alistair Mackay made history on 16 January 1909 when he and two other members of Sir Ernest Shackleton's Antarctic Expedition finally reached the South Magnetic Pole after an arduous three-month trek, hauling their sleds behind them across the polar ice cap.

Mackay, who was also in the first party to conquer the 12,448-foot high peak of Mount Erebus—the second highest volcano in Antarctica—died of exposure in 1913 while serving as the ship's doctor on the ill-fated Karluk expedition, funded by the Canadian Government, to explore the Parry Archipelago in the Arctic Circle.

His collection of rare medals, which include the Polar Medal and the Antarctic 1907-09 Medal, are expected to fetch up to £5,000 when they are sold at an auction at Bonham's auction rooms in Knightsbridge on 16 October.

Dr. Mackay was the son of Lieutenant Colonel Forbes Mackay, of the 92nd Gordon Highlanders, and studied medicine at Edinburgh University, graduating with an M.B and Ch.B before going on to study biology at Dundee University.

He then served in the Boer War as a Trooper and later joined Baden Powell's police unit before returning to the UK to pass his final exams in medicine.

Mackay, who briefly returned to service in the Boer War as a surgeon, then entered the Royal Navy as a surgeon in November, 1902, serving on both the survey vessel HMS *Research* and HMS *Royal Oak*. He then joined Ernest Shackleton's Antarctic Expedition of 1907-09 as the expedition surgeon.

A spokesman for Bonham's said: "The expedition arrived on the ship *Nimrod* at Cape Royds in Antarctica in February 1908 and set up camp in a small expedition hut that would house the 15-man party through the winter."

In March 1908, together with Douglas Mawson and Professor Edgeworth David, Mackay was in the part of climbers which undertook the first successful ascent of Mount Erebus.

The Bonham's spokesman explained: "The following spring when Shackleton set off to attempt to reach the South Pole, he despatched Mackay, Mawson and David northward to reach the South Magnetic Pole which lay approximately 650 kilometres Northwest of Ross Island. The trek commenced on 5 October, 1908, with the men hauling their own sleds and relaying the loads which meant that every kilometre gained by the sledges involved them travelling three kilometres by foot.

"For ten weeks the men followed the coast north, supplementing their stores with a diet of seals and penguins. They then crossed the Drygalski Ice Tongue and turned inland. They still faced a 700-kilometre return journey and established a depot to enable them to transfer their load to one overladen sled and to remove the need to relay. On the 16 January, 1909, they arrived at the South Magnetic Pole, took possession of the region for the British Crown, and Mackay suggested three cheers for the King."

Mackay died in 1913 after joining the Karluk expedition as the ship's doctor. The expedition was led by Vilhjalmur Stefansson to explore the regions west of Parry Archipelago for the Government of Canada. After the *Karluk*, captained by Robert Bartlett, was stranded, crushed and sunk by pack ice, Mackay and three other members of the crew died of exposure while struggling across the Arctic ice to reach Wrangel Island.

His medal collection also includes the Queen's South Africa medal 1899-1902 with five bars, and the Cape Colony, Orange Free State and Transvaal medals.

Slessor medals

The sale also features a group of medals, including the Polar Medal and OBE, awarded to another famous Scottish polar explorer, Surgeon Lieutenant Commander Robert Slessor who is one of the few explorers to have had a mountain named after him—the 7,776-foot Slessor Peak in Antarctica. ¶

Uncertainty Hangs Over Recovery of the Bodies of Three Canadians

http://www.660news.com, 7 Oct 2013—There is some confusion about who should coordinate the retrieval of the bodies of three people who died when a Calgary-based company's plane crashed in Antarctica.

The frozen remains of three Canadians have been in the wreckage for nine months, stuck on the side of one of the highest mountains in Antarctica.

An official with Canada's Transportation Safety Board says it has decided the crash site is too dangerous to send in investigators.

New Zealand's search and rescue centre helped in the initial search for the plane, but a spokeswoman says it deals only with emergency situations and won't be helping in any recovery.

The dead are 55-year-old Bob Heath of Inuvik, 36-year-old Perry Andersen of Collingwood, Ontario, and 25-year-old Mike Denton of Calgary.

The three men were all employees of Calgary-based Kenn Borek Air.

Summer is starting at the bottom of the world, and that was supposed to mean the launch of a mission to recover the bodies.

The chief coroner of New Zealand, Judge Neil MacLean, says the mission should be done by whoever has the capability to do it; adding the families of the victims deserve to bid a proper farewell to their loved ones. ¶

Editor's Note: Families of the victims have expressed concern about risking lives to recover the bodies.

Antarctica is a 'Man's World' — or Is It?

by John Splettstoesser

Anyone with experience in Antarctica in the 1960s might be familiar with the expression "Antarctica is a man's world," implying that only men were involved in early exploration that included living in the harsh environment, eating pemmican, driving dog teams over hundreds of miles and experiencing fierce blizzards that often blew the tent away. Frostbite was common, and missing toes were the price to pay for the heroic life that you could relate to the audiences back home.

I recall hearing the expression about a "man's world" from a geology professor who selected field assistants who were tall, muscular and did lots of climbing in New England and hiking on the Appalachian Trail with heavy backpacks loaded with supplies and rocks. "Manhauling" was the means to move around in the field in Antarctica, and long days on the trail with a Spartan meal of "hoosh" for dinner was a normal way of life. In short, conditions that (it was assumed) would not be tolerated by women.

Colin Bull, a British geophysicist with numerous days on the trail in Greenland and (the aforementioned) Spartan living in the Dry Valleys in the late 1950s, changed all that when he persuaded the National Science Foundation and the U.S. Navy—organizations that funded and provided logistical support for U.S. research in Antarctica—to launch an all-female field party for a summer of research in the Dry Valleys in the 1969-70 austral summer. The Navy's response to earlier requests pertained to lack of proper facilities for females in Antarctica, the same reason that women were excluded from U.S. Navy vessels for many years. Other national programs operating in Antarctica also excluded females for many years in field programs, but those "rules" have now been relaxed for the most part.

The U.S. program included a female, Dr. Michele Raney, M.D., who overwintered at the U.S. South Pole station in 1979. Dr. Raney was the acid test to prove the point that Colin Bull initiated or, in her case, that it was possible for women to winter over at the most remote station on the continent. Germany followed suit with an all-female expedition at Georg von Neumayer station in 1990-91. Thereafter, a flood of females followed in a variety of field programs in Antarctica, both in science and military positions, such as on LC-130 flight crews.

It is now routine to visit McMurdo and see scores of women in various capacities of activities, from driving the shuttle bus to Williams Field to dissecting ice fish in the Crary Laboratory.

How do other treaty party nations handle the issues of gender in Antarctica? Clearly, there is more to it than merely showing skeptics that a female has been hired (similar to university quotas I have witnessed in the past), the key being careful screening to ensure success in a situation of confinement at an Antarctic station.

A recent news item from the Australian Antarctic Division (AAD) provides an excellent example of equal opportunity for key positions in its staffing for stations. This example told the story of Rachel Robertson, station leader at Davis Station, who successfully handled an incident of a plane crash that left station personnel stranded for some days before they could be evacuated, as well as a case of depression in someone at the station. Her explanation of how incidents like these could be addressed shows the signs of an experienced leader, citing examples that were intended to combat boredom during the long winter—birthday parties; a formal dinner every Saturday night; theme nights with innovative costumes; a strict policy of "no triangles," meaning that she would discuss issues with the person involved in a problem and never talk about someone else. Her policy was to always make herself visible at times when decisions need to be made.

By this time, it should be apparent that leadership makes the difference between success and failure. Rachel Robertson is well known in Australia as a professional motivational speaker on leadership, and I expect she is kept busy as a result of her experience gained in overwintering. Her book, Leading on the Edge (Wiley), would probably be useful as a manual for a motivational speaker to address a variety of audiences.

Australia initiated the policy of female station leaders at three of its stations in 1989—Marquarie, Mawson, and Casey. I traveled with one of these women, Louise Crossley (who was station leader at Mawson in 1991) when we were both employed as lecturers on a tour ship in Antarctica. She was also station leader at Macquarie in 2000. The qualities that survived screening for the job showed readily in her personality, including her inclination to volunteer, her ability to communicate with those around her and to always be pleasant.

Dr. Eve Merfield, a station doctor who wintered at Casey, is a friend of mine who has described some of the challenges that a station leader experiences and, in her case, must be able to handle, including any emergency that comes along—even, at times, enlisting station personnel to assist in a variety of operating room procedures. She also mentioned one of the many requirements that the AAD imposes. For instance, Dr. Merfield was required to have her appendix removed before she was accepted for the job.

A review of women in Antarctica in these and other capacities is in Encyclopedia of the Antarctic (Beau Riffenburg, editor, p. 1087-1097). ¶

A Plane Crash, Four People Stranded

Rachael Robertson's Lessons from Leading an Expedition to Antarctica

***Smart Company*, 21 October 2013, by Myriam Robin**—It was during the Antarctic summer when Rachael Robertson's worst moment came.

While the leader of Davis Station, the southernmost of Australia's Antarctic stations, four of her team had their plane go down, with them in it. They survived, but their plane was totalled. They were stranded 500 kilometres away from help, with 10 days' worth of food.

For three days after they crashed, bad weather kept everyone at ground.

"I wanted nothing more than to hole up in my office and plan the search and rescue," Robertson tells SmartCompany.

"But I couldn't. There were 116 other people watching me. It wasn't enough to lead the search and rescue. I had to be seen to be leading it. I had to be out there so people could ask me questions. Because people watch the leader, and pick up queues about how serious a problem is from that."

Robertson chose her words very, very carefully. She said she had "concerns" about the stranded members of her team, but she never

said she was worried. She patiently answered people's questions. She tried not to let her fear show.

The team was eventually rescued safe and sound.

When Robertson answered an ad to lead an expedition to Antarctica, she'd been chosen for her leadership skills.

But this tested them like never before.

During the summer months, she led a team of 120 isolated scientists and technicians at one of Australia's two Antarctic stations. And then, in the winter, she led a team of just 16, through four months where they never saw the sun.

Looking back, the former park ranger says she "doesn't regret it for a second."

"I learnt so much. But I wouldn't do it again.

"I'd been in leadership roles for 16 years. I should have been more aware of the scrutiny. That's what the toughest part was. The absolute scrutiny of when you came down for breakfast, and what time you had dinner, and what you're wearing.

"And anyway," she laughs, "most of the time there was nothing else going on so of course people took notice."

At the station, the scientists and technicians had email but no internet. They could make phone calls, but it was expensive. Most had bought a bunch of movies and books with them when they moved, but after a few months, those ran out.

To break the boredom, they had a formal dinner every Saturday night. Once a month, they had a theme night, preparing innovative costumes for the occasion. They threw birthday parties. They made their own fun.

But spending all that time together wasn't easy.

"I didn't select these people. And they didn't choose me. The elements were harsh. But it had nothing on the interpersonal pressure of living on top of each other."

To make it bearable, Robertson laid down some ground rules.

"We had a thing called 'no triangles'. So, I don't speak to you about a third party. We had direct conversations. We made sure we dealt with stuff, because we couldn't ignore the issues and hope they went away.

"It worked really well. It was really honest, and became part of our culture. It seems obvious, but not enough businesses do that I think."

Despite the stage being ripe for disagreements, Robertson says for the most part, her team exceeded her expectations.

"Our toughest moment was equally our proudest.

"Someone was diagnosed with depression. And the guys closed ranks and looked after this person. They kept inviting him out, kept him engaged. He kept saying no but they kept doing it. I didn't have to say anything—and I couldn't reveal his illness for confidentially reasons—but they picked up on it and showed they cared."

Away from friends and family, in a world of routine and little choice, many of her team had rough patches.

That's why Robertson found reasons to celebrate.

"We'd throw celebrations for things like 100 days without a server dropping out, or 50 days without a power outage. Those things build momentum, and a sense that we were moving forward and progressing.

"Every workplace has an Antarctic winter—a period of time where work is work. Leaders always need to find reasons to celebrate."

A book about Robertson's experiences, *Leading on the Edge*, is published by Wiley and available in bookstores across the country and through Rachael Robertson's website, www.rachaelrobertson.com.au. RRP $29.95. ¶

From inspiring to doing: As the ad men on 'Mad Men' would say ...

'You've Come a Long Way, Baby!'

PHOTO COURTESY WWW.TELEGRAPH.CO.UK

Sir Ernest Shackleton and his wife Emily Dorman Shackleton

The Telegraph **(www.telegraph.co.uk), 12 August 2013, by Hannah Furness**—Kari Herbert claims that Sir Ernest Shackleton only made his first expedition to impress his lover.

Miss Herbert, the daughter of the Polar explorer Sir Wally Herbert, said Capt Robert Falcon Scott would "absolutely not" have reached the South Pole without the robust encouragement of his wife, Kathleen.

Miss Herbert, who researched the women for her new book *Heart of the Hero*, said the stories of explorers' wives were "fantastically important" in expeditions to the Antarctic.

"In the case of Scott, absolutely he would not have gone down to the Antarctic again without Kathleen," she said.

"Shackleton only signed up to win his bride. He wanted to impress her and it was the only way he could think of impressing her enough that she would marry him.

"We all know the stories of Captain Scott and Shackleton but do we know anything about their wives? No."

Miss Herbert, who first visited the Arctic with her parents when she was 10 months old, told an audience at the Edinburgh International Book Festival the "incredible stories" had allowed her to "rediscover the voices of these women".

She said Capt Scott would not have gone back to the Antarctic for his most famous, and ultimately disastrous, expedition without the support of his wife.

"He has this huge period of melancholia where he believes he can't do it," she added.

"Kathleen writes these letters to him, one saying: 'You shall have the pole,' underlined three times.

"She said: 'Do take risks'.

"I really don't believe Scott would have got to the pole without her."

Miss Herbert said Shackleton had been a merchant seaman for many years before successfully courting Emily Dorman.

"She thought he probably had a girl in every port," she said. "She was older than him and was not impressed at all.

"He absolutely fell for her. They were from different classes. Her solicitor father thought it was an unequal match.

"When the *Discovery* expedition came up, Shackleton thought, this is my chance to prove myself to Emily. The moment he got the 'yes,' he went and asked for her hand in marriage."

She said the letters he wrote from the expedition were "really poignant," showing him torn between the pride of being accepted for dangerous missions and the importance of surviving to get back to Emily.

Shackleton's career was notable for ensuring all his men all returned alive because of his commitment to family.

Miss Herbert said it was amazing to discover the voices of the explorers' wives as she read their letters.

She said: "I was hearing the voices of these women who had never been heard before." ¶

CSU Antarctic Researcher Diana Wall in Colorado Women's Hall of Fame

Colorado State University, FORT COLLINS, 11 November 2013—Diana H. Wall, world-renowned ecologist, Antarctic researcher, and University Distinguished Professor at Colorado State University, has been named one of the 10 inductees to the Colorado Women's Hall of Fame for 2014.

"I'm extremely honored to be selected," Wall said.

Wall and five other contemporary women, along with four historical figures, will be honored during the Colorado Women's Hall of Fame 2014 Induction Gala on March 20 at the Denver Marriott City Center.

"The entire Colorado State University community joins me in congratulating Dr. Diana Wall on her induction into the Colorado Women's Hall of Fame," said CSU President Tony Frank. "Diana is an inspirational scientist and educator who has transformed our understanding of global climate change and environmental sustainability. It seems fitting that one of the most respected environmental scientists of our age would be honored as one our state's most accomplished and celebrated women leaders."

Wall, founder and director of the School of Global Environmental Sustainability at CSU, has spent 24 seasons in Antarctica researching some of the planet's smallest animals, microscopic worms called nematodes, that play a vital role in soil nutrition and biodiversity. In Antarctica, the worms can be studied unhindered by plants and animal life.

In 2005, Wall Valley in Antarctica was named for her achievements.

In 2011, Wall served as a member of a working group of the President's Council of Advisors on Science and Technology because her studies impact policies responding to threats to the nation's ecosystems. She was one of only 12 people—and only four scientists—serving on the U.S. Antarctic Blue Ribbon Panel, which was led by Norm Augustine, retired chairman and chief executive officer of Lockheed Martin Corp. In February 2012, Wall and other members of the team visited the Antarctic's Palmer Station to help the panel evaluate the future of U.S. research in Antarctica.

Earlier this year, Wall received The Tyler Prize for Environmental Achievement on the 40th anniversary of the award. The Tyler Prize is the premier international award for environmental science, environmental health and energy conferring great benefit upon mankind. Previous winners have included Jane Goodall, Thomas Lovejoy and Edward O. Wilson. In November, she was presented the President's Award from the Soil Science Society of America, the highest honor bestowed by the organization on someone whose work will have a lasting impact on the future of soil science.

"In addition to all of her great work outside of Colorado, Diana has made incredible contributions to our state, and to Colorado State University," said former Colorado Governor Bill Ritter, who, as director of the Center for the New Energy Economy at CSU, has worked closely with Wall on issues of environmental sustainability. "As the founder of SoGES, Diana designed and built a program that has become an umbrella organization that cuts across much of the environmental education and research at the University. SoGES positions CSU to address the multiple challenges to global sustainability through broad-based research, curricula, and outreach initiatives in areas of food security, poverty, inequality, water management strategies and desertification, globalization, industrial ecology, sustainable engineering, population growth, and urbanization. She is truly deserving of a place in the Colorado Women's Hall of Fame."

Elizabeth Heid, chair of the board of the nonprofit Colorado Women's Hall of Fame, explained that Wall's impressive achievements led to her selection.

"Diana Wall will be inducted into the Colorado Women's Hall of Fame because she has made an enduring contribution to the field of environmental science and her achievements inspire girls and women everywhere," Heid said.

In addition to Wall, this year's Contemporary inductees are Christine Arguello, U.S. District Court Judge; Lauren Casteel, first African American woman to head a Colorado foundation; Penny Hamilton, Ph.D., pilot, aviation educator; Kristina Johnson, Ph.D., internationally acknowledged expert in optics and crystal display technology; and Joanne Maguire, aerospace executive who led the development of the Mars Rover.

Historical inductees are (Elizabeth) Morley Cowles Ballantine, *Durango Herald* publisher, businesswoman and philanthropist; Julia Archibald Holmes, pioneer and women's rights advocate; Elizabeth Wright Ingraham, architect and businesswoman who designed AIA-award winning buildings in Colorado Springs; and Helen Ring Robinson, first female Colorado State Senator.

Photo courtesy Colorado State University

Diana H. Wall, Ph.D., Colorado State University

The Colorado Women's Hall of Fame was founded in 1985 to inspire others by celebrating and sharing the enduring contributions of Colorado's extraordinary women. The Hall serves as a leading resource of exciting, dynamic stories of women who have achieved greatness in their fields or acted as agents of change for girls and women in society. Temple Grandin, CSU professor of Animal Sciences and renowned autism advocate, was inducted into the Hall in the last class in 2012.

Nominations to the Colorado Women's Hall of Fame are accepted from individuals and organizations throughout the state. A diverse group of Colorado citizens forms the selection committee that chooses those inducted.

Maury Dobbie, assistant director for the Center for the New Energy Economy at CSU, nominated Wall for the Hall of Fame.

"Diana is a great example of a woman who looked past the normal barriers with an eye on leaving a lasting difference on the world," Dobbie said. "I've been inspired by her years of amazing accomplishments alongside her science-based peers. She was a rare woman in a man's field for many years who has worked to leave a lasting positive legacy on the earth. She inspires women like myself to dedicate our work to something that is greater than ourselves."

To view photos and profiles of contemporary and historical members of the Colorado Women's Hall of Fame, visit www.cogreatwomen.org and click "The Hall" button to locate links.

For more information about Wall, visit www.sustainability/colostate.edu/about/leadership. ¶

U.S. Antarctic Program Resumes In Part After Government Shutdown

***NSF (modified press release),* 28 October 2013**—Following a cessation of 16 days in October 2013 in a shutdown of selected activities, NSF and the U.S. Antarctic Program revived as many programs on short notice as was practical, and within the limits of budgets and identifying research projects that were most likely to experience major losses of significant data by excluding them from the austral summer activities in whole or in part. The partial shutdown of 16 days would have allowed the U.S. to conduct caretaker status at its three Antarctic stations until Federal funding could be restored.

In mid-October, after a Continuing Resolution was approved to keep the government running until mid-January, NSF and its U.S. Antarctic Program partners began examining the planned research schedule to see how much could still be accomplished by the end of the field season, in February of 2014, while simultaneously ramping back up the complex logistical framework needed to support the science.

The 16-day interruption caused some early-season research in the vicinity of McMurdo Station to be deferred--either because of the complexity of the logistics needed to support the science or because the research itself was planned for a short and specific duration--and also delayed preparations for research scheduled to take place later in the season. Research that was deferred this season, but that will be supported next year, will displace new starts from the proposals currently in review.

Despite the setbacks, a cooperative effort among NSF; the agency's operations and research support contractor, Lockheed Martin; the Department of Defense, which provides critical airlift and other support to the program; and other U.S. agencies has allowed NSF to develop a schedule for deploying researchers to recover the tempo of research to the extent possible.

As of Oct. 24, 2013, some 49 of the 77 scheduled projects in the McMurdo area were scheduled to deploy this season, with some of those 49 deploying with reductions or modifications in scope, but in a way that allow them to meet the principal science goals for the season. Projects may include one or more investigators supported by separate grants.

Also as of Oct. 24, a total of 13 planned deployments in the McMurdo vicinity have been deferred for various reasons. A further 15 projects remain to be evaluated.

The unusual circumstances, unique in the Antarctic Program's more than 50-year history, have caused the cancellation of some large-scale research for the season, including most of the support for NASA's Long-Duration Balloon facility; a camp on Mt. Erebus, atop the world's southernmost active volcano; a field camp for the West Antarctic Ice Sheet (WAIS) Divide project; and an over-ice traverse to support portions of the Whillians Ice Stream Subglacial Access Research Drilling (WISSARD) Project.

Principal investigators on deferred projects have been alerted to their status.

NSF's decisions about which projects it is able to support were based upon a range of factors, including:

- a need to insure the continuity of long-term data sets
- time-criticality of observations or studies,
- potential effects on young or early-career investigators, and
- international or interagency partnerships.

NSF maintains three year-round stations in Antarctica: McMurdo, Amundsen-Scott South Pole and Palmer. The effects of the shutdown were felt most among projects based from McMurdo Station, on Ross Island.

Although some effects will be felt at South Pole, the station opens later in the research season than McMurdo and the effects are anticipated to be primarily related to potential delays of the delivery of science cargo or movement of people.

Palmer, on the Antarctic Peninsula near South America, is the smallest of the three stations and is supported by a different logistical stream than the other two stations. Research at Palmer Station and on the USAP research vessels Nathaniel B. Palmer and the Laurence M. Gould is expected to proceed largely as planned.

Collectively, the science at these stations represent approximately 100 additional projects. ❡

Outrage as Aussie PM Abolishes 'Antarctic Animal Ethics Committee'

http://frontpagemag.com, 9 November 2013—On Friday, the government will also announce the immediate dismantling of a raft of government advisory bodies, expert panels and national steering committees.

The bodies scrapped are: Australian Animals Welfare Advisory Committee; Commonwealth Firearms Advisory Committee; International Legal Services Advisory Committee; National Inter-country Adoption Advisory Council; National Steering Committee on Corporate Wrongdoing; Antarctic Animal Ethics Committee; Advisory Panel on the Marketing in Australia of Infant Formula; High Speed Rail Advisory Group; Maritime Workforce Development Forum; Advisory Panel on Positive Ageing; Insurance Reform Advisory Group; and the National Housing Supply Council.

What is the Antarctic Animal Ethics Committe, you might ask?

All researchers planning to carry out any investigation in the Australian Antarctic program that involves vertebrate animals (including fish), or cephalopods such as octopus or squid, must obtain ethics approval from the AAEC.

So if you're going to do any experiments on fish or squid, you have to get permission from the AAEC. Except now there will be no AAEC. So you'll just have to ask Aquaman.

Data to Expose 'Sleeping Ice Giant'

***BBC News*, SAN FRANCISCO, 13 December 2013, by Jonathan Amos, Science Correspondent**—Scientists have finally begun mapping one of the least explored regions of Antarctica—the Recovery Catchment.

The new survey data should reveal how this vast tract of ice in the east of the continent is likely to respond to a warming world.

Recovery is currently perfectly stable, but any change could have significant global impact because it contains the equivalent of 2.5-3m of sea-level rise.

The ICEGRAV project is trying to determine its vulnerabilities.

"In some senses, this huge Antarctic feature is a sleeping giant," said Dr Fausto Ferraccioli from the British Antarctic Survey.

"We want to understand the circumstances that might disturb it," he told BBC News.

The project has flown a plane packed with instruments over a large section of the Recovery Catchment, which extends from a point known as Dome A, deep in the ice sheet's interior, all the way to the coast, where glaciers feed the Filchner and Ronne ice shelves in the Weddell Sea.

The aerogeophysical campaign's first data products, presented to AGU, are maps showing variations in gravity, magnetism and ice thickness across the region. The data provides details not possible to observe from satellites.

This data will provide a profile of Recovery from the top of the ice right down to the crust. The ICEGRAV scientists will attempt to diagnose the future of the catchment.

Under some global warming scenarios for the end of the century, warm water from the Southern Ocean is expected to penetrate deep into the Weddell Sea, eroding the base of its ice shelves.

This could accelerate ice discharge from the Recovery catchment and potentially affect the stability of the East Antarctic Ice Sheet.

"If we then find the rock bed dips away from the grounding line at the coast towards the interior, we could get something called marine ice-sheet instability," explained Dr Ferraccioli.

"What this means is that once you have warm water getting into the system, there is little to stop further retreat of the ice sheet.

"This is one of the most critical questions we have about Recovery: what is the shape of the bed near the ice sheet's grounding line?"

Prof Robin Bell, from the Lamont-Doherty Earth Observatory, at Columbia University, New York, will lead the US effort.

"On our existing bed maps, [Recovery Catchment] looks—as I like to say—like 'pancake land' because we don't know much about it. But it's one of those places where warm water could reach fairly far into the ice sheet. Some of the other pancake lands we haven't mapped on the continent appear to be pretty high, so they're not so much of a concern.

"I've always thought this area is an Achilles heel for East Antarctica, but until we have the data we won't know that for sure," she told BBC News. ¶

Antarctica Harboured Strange Forests 250 Million Years Ago?

***Zeenews.india.com*, 4 November 2013, NEW YORK**—Weird forests with certain features of modern tropical trees may have sprouted in Antarctica about 250 million years ago, a new study has found. During the late Permian and early Triassic period, the world was a greenhouse, much hotter than it is now. Forests carpeted a non-icy Antarctic which was still at a high latitude, researchers said.

How plants coped with photosynthesising constantly for part of the year and then not at all in the winter is strange, according to Patricia Ryberg, a postdoctoral researcher at the University of Kansas Biodiversity Institute.

The leaf impressions of the Antarctic forests appear to show mats of leaves, as if the trees had all shed at once—a sign of a deciduous forest, *LiveScience* reported.

Researchers gathered samples of fossil wood and examined the tree rings. Wood cells in the rings reveal how the trees grew. Ryberg and her colleagues examined the Antarctic fossils and found that they looked evergreen. Follow-up studies analysing carbon molecules in the fossil wood also gives both deciduous and evergreen answers, Ryberg said. ¶

Antarctic News

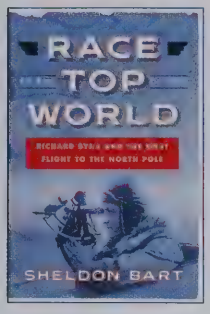
Walking With the Wounded

The Guardian, ***17 September 2013***—Prince Harry of the British Royal Family will be a participant in a charity venture for "Walking With the Wounded," commemorating those who experienced disabilities in war zones such as Afghanistan. A team from U.K. will compete against one from the U.S. and another from Commonwealth countries (Australia and Canada) in a trek to the South Pole, starting in November 2013 and ending at the Pole on or about 17 December 2013. The trek of 15 days and 300-km length will start at Station Novo in Queen Maud Land, after arriving from Cape Town. Prince Harry sponsored a similar trek in 2011 to the North Pole. ¶

Antarctic Marine Reserve

New York Times Editorial Board, 16 September 2013—An 875,000-square-mile proposal—chiefly by the United States and New Zealand—would provide extensive reserves around the Southern Ocean to protect a largely pristine aquatic ecosystem in Antarctica. In July 2013, at the most recent meeting of the Commission for the Conservation of Antarctic Marine Living Resources in Bremerhaven, Germany, it was thought the proposal would finally pass. However, it failed again, largely because of legal objections by Russia and Ukraine. In addition, fishing nations like China, Norway and Japan called for smaller reserves and a 'sunset clause' that would allow for future exploitation. As a result, thinking that something is better than nothing, the U.S. and New Zealand announced that they would agree to shrink the proposed reserves by 40 percent at the coming meeting in Hobart in October 2013. The decision seems to have more to do with preserving a process then preserving an ecosystem. ¶

Book Reviews



Race to The Top of The World: Richard Byrd and the First Flight to the North Pole

by Sheldon Bart
Regnery History 2013
328 pages, $29.95

Reviewed by Cliff Bekkedahl

Better yet, race to the top of the non-fiction best seller list!

Certainly, if there were a category devoted to polar literature this book would take top honors.

Our Sheldon Bart, member Board of Governors of The American Polar Society, has produced a definitive work detailing the achievements of Richard E. Byrd, aviation pioneer, polar explorer and all-American hero circa early to mid-1920's and beyond.

The author wastes not a page telling us straightaway that Byrd "carried the fire at the beginning of aerospace. He mastered aviation technology in its infancy and moved it several important steps forward through his own creativity and resourcefulness. He was not a coward, not an alcoholic, and not disliked by his men. There is no foundation whatsoever to the raging controversy over his North Pole flight and no substantial evidence that he was afraid to fly or afraid of anything other than going broke trying to make ends meet at the ends of the earth."

Sheldon proceeds to prove in great detail the basis for his strong and unequivocal testament to this American icon.

There is a back story to this important work. Sheldon on an occasion several years ago had an opportunity to be among the first scholars and polar enthusiasts to explore the 143 cartons of Byrd papers deposited at the new Byrd Polar Research Center at Ohio State University. He recognized the elephant therein and began an effort to write the total and all encompassing Byrd biography. Byrd saved every scrap of paper, log book, financial document, letters and copious notes on any subject that captured his attention. Sheldon launched a major undertaking to be sure but, with a thousand pages in hand and no end in sight, his then publisher bailed out.

Giving up was not an option and Sheldon took the long hard look and realized that the seminal years of aviation and those daring young men with their fixed wing or hydrogen filled airships combined with the national and international fascination with polar exploration was a story—told, but in need of re-telling. And re-told from the perspective of the man who got there first—only by a few days, but first, nonetheless.

In many ways this is a genuine page turner, a captivating yarn not to be put down and yet, it is above all, a detailed historical account of Richard E. Byrd's undeniable prowess as a leader, aviator and polar explorer.

This is a gift from Sheldon Bart to anyone fascinated with the early years of aviation and the advances that were tested and achieved, men and machines, in the harshest of environments. It belongs in your personal library. ¶

Southern Light: Images from Antarctica

By David Neilson
Snowgum Press, 2012, 306pp, $85

Reviewed by Jeff Rubin

First of all: this is one of the most stunning books of Antarctic photography ever published.

To put it another way, these are the images that every visitor to the continent—including even other professional photographers—hopes to obtain.

Australian wilderness photographer David Neilson has previously written and photographed three books, two on Australia and another on Patagonia.

But the Great White South, he writes, "has soaked into my soul to a degree I did not expect. And for this I will always feel extremely fortunate."

We can feel the same way.

Some photographers feel ready to publish a book of their Antarctic work after a single journey; Neilson bided his time.

Over 19 years he made six extended voyages to Antarctica.

This collection could hardly be improved were Neilson to go South a dozen more times—*Southern Light* is absolutely superlative.

Published in large format (305 mm x 295 mm) with extremely high quality printing and paper, this finely-made, beautiful book deserves all the awards and prizes it will surely win.

Among the 130 color photos are many showing Antarctic birds and other animals, some in extreme close-up. A crabeater seal's whiskers, the inside of a gentoo penguin's mouth, a blaze of ice-covered orange lichen: all are shown in razor-sharp focus.

At more than twice life-size, the heads of a pair of king penguins become abstract art: looping swirls of black, orange, grey-white, canary yellow. Enlarged nearly five times, a royal penguin's golden crest feathers can be examined fiber by fiber.

Many of the landscape images were taken with a large-format view camera and they are even more amazing. Seven are "gatefold panoramas" spread across three pages; they are 875 mm, or nearly three feet, wide!

A separate section showcases 100 black-and-white photos reproduced in duotone. Some of these images would probably have been as striking, or more so, in color—but others, like a pair of mating chinstrap penguins, or the ghostly blurs of snowy sheathbills flying in front of a king penguin rookery, require the elegant contrasts achieved only with black and white.

You will turn the pages of this book and be surprised and impressed at each new photograph.

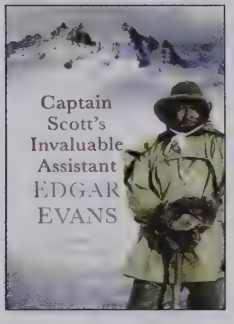
Interspersed with the images are short essays on Antarctica and climate change and on protecting the Antarctic environment, and a long narrative describing the photographer's six Antarctic trips: 1990-91, Mawson station through the Australian Antarctic Division's Humanities Program; 2002, South Georgia aboard yacht Tooluka; 2004-5, back at Mawson on an Australian Antarctic Arts Fellowship; 2006, Antarctic Peninsula and 2008, the Peninsula and South Georgia, both aboard yacht Australis; 2009, tourist expedition to the Ross Sea.

That Neilson is an artist is obvious from his photographs; that he is a poetic writer becomes evident when we read of his deep feeling for southern light: "If any colour symbolises Antarctica it is blue...At its strongest it is like a colour with its own energy source; it emanates blueness as if it were radioactive."

Southern Light's final pages include notes on Neilson's equipment and film (yes, *film*—60 percent of the images were made with film). This section is sprinkled with images of Neilson himself, taken by other photographers. One shows a king penguin apparently nibbling his ear.

In our Photoshop era, Neilson is careful to note: "Nothing has been digitally removed from or added to any image in this publication."

Neilson's photography needs no computer trickery. Art such as his is produced only by the eye and hand of a master. ¶



Edgar Evans: Captain Scott's Invaluable Assistant

by Isobel Williams
The History Press
www.thehistorypress.co.uk
ISBN 978 0 7524 5845 8
192 pgs, 2012, Index. £14.99

Reviewed by Charles H. Lagerbom

It is a travesty and quite shameful that it has taken nearly a hundred years for Petty Officer Edgar Evans to get his proper due and recognition for his role in the Antarctic expeditions of Captain Robert Falcon Scott. He was the only one of the five men of the British expedition who planted the Union Jack at the geographic South Pole in 1912 who was not only considered unworthy of his own biography, but was roundly condemned by many as having caused the death of the rest of the polar party. It was not until 1995, when the first full-fledged work dedicated solely to Edgar Evans was written. G. C. MacGregor's *Swansea's Antarctic Explorer: Edgar Evans, 1876-1912* tried to right this injustice. Now, with the centenary celebration of the attainment of the pole, new works and biographies are being produced. Isobel Williams has stepped forward and written a biography of Edgar Evans that takes what MacGregor started and builds onto the case for the rehabilitation of the petty officer's reputation. She is also the author of the enjoyable *With Scott in the Antarctic: Edward Wilson Explorer, Naturalist, Artist* (2008).

In a quite readable and nicely detailed biography, Williams presents the life of Edgar Evans. The problem, and it is by no means her fault, is that history itself has not yet quite decided what to make of this big Welshman and his role in the polar party. That is due, in part, to him being historically shunned. Williams dutifully records his early years, his connection with the sea by having a father who was a Cape Horner, and his large family and local roots in the Gower Peninsula of South Wales. While she

chronicles his early days in the Royal Navy, there is not much about his first encounter with Robert Scott, the man who would change Evans' life. While a little short on their introduction to each other, she does an admirable job in illustrating how they built their connection and formed their unique bond, most notably on the western sledging trips during the *Discovery* expedition.

Williams does gloss over some unsavory aspects of Evans such as his drinking and his possible marital infidelity, but she does the man justice with his contributions to the successes of the *Discovery* and *Terra Nova* expeditions. What emerges is a complex picture of a man that one still does not feel one truly knows or understands. What one does comprehend about Evans is that he got impugned first by Scott and then later chroniclers of that last expedition. When Scott confided in his diary that he was surprised that Evans showed signs of losing heart and that this greatly disappointed Scott about the big man of the party, he damned Evans in the eyes of those seeking to place blame for the polar party's eventual demise. Evans was further disparaged for many years by the spurious notion that a contributing factor to his breaking down was because he was not as educated as the others. His collapse at the foot of the Beardmore Glacier has been unfairly compared to how Titus Oates met his end, by gallantly storming out into the snow in order to save his comrades. This shabby treatment of Evans is unacceptable and MacGregor and now Williams have attempted to set the record straight. Edgar Evans was Scott's hand-picked representative of the lower deck to go on with him to the South Pole. Edgar Evans distinguished himself countless times on both Antarctic expeditions. He deserves his rightful place, rightful treatment and rightful recognition alongside Scott, Wilson, Oates and Bowers. ¶

The Emerging Politics of Antarctica

Edited by Anne-Marie Brady (Routledge, 2013, 264pp, $135)

Reviewed by Jeff Rubin

This timely and important collection of 12 papers examines the current challenges in governing Antarctica and their effects on the Antarctic Treaty System (ATS), describing the interests and activities of relatively recent participants in Antarctica such as China, India, Korea and Malaysia as well as the responses of the traditional Antarctic powers, the U.S. and Russia, and claimant countries like France and New Zealand.

The best paper, by editor Anne-Marie Brady, an associate professor in political science specializing in Chinese and polar politics at New Zealand's University of Canterbury, concerns China. Commensurate with its increasing global influence and economic strength, China has in recent years made a massive investment in both polar regions. Over the past decade, the Chinese government has nearly tripled its annual expenditure on Antarctic affairs, from around US$20 million in 2003 to US$55 million currently.

In November, China's 30th Antarctic expedition sailed from Shanghai to scout Terra Nova Bay for a site for its yet-to-be-named fifth Antarctic station, to be completed by 2015, even though its fourth, a summer-only facility named Taishan, is still unfinished. Taishan will be set up between Zhongshan station in East Antarctica (built in 1989) and Kunlun, a summer-only station established in 2009 at Dome Argus (Dome A) at an altitude of 4,086m on the East Antarctic ice sheet. China also recently upgraded—and doubled in size—its first Antarctic station, Chang Cheng (Great Wall), built on King George Island in the South Shetlands in 1985. And at a cost of US$300 million, China is also nearing completion of its second icebreaker—in stark contrast to the U.S.'s ongoing lack of a single dependable icebreaker, a vulnerability pointed out by two different authors in this book.

The reason for this massive investment, Brady says, is Antarctic resources and China's desire to extract them. China does not recognize the territorial claims in Antarctica made by seven countries and regards the sovereignty of the continent as unresolved. Yet Chinese spending in Antarctica to date has been primarily on infrastructure, not research, and this fact, coupled with acute shortages of English-speakers among senior personnel, has prevented China from taking on more leadership roles within Antarctic governance bodies.

The paper on Korea, co-written by Brady with master's degree student Kim Seungryeol, makes clear that Korea, too, is interested in Antarctic resources (petroleum, methane hydrate, krill). It is building a US$90 million second station, Jang Bogo, at Terra Nova Bay due for completion in 2014. (Korea's first Antarctic station, King Sejong, was built in 1988 on King George I.) Korea's icebreaker Araon was launched in 2009, and, significantly, Seoul expects the expertise gained from its construction could win it shipbuilding contracts worth up to US$300 million.

Malaysia's longstanding opposition to the Antarctic Treaty—and the long road it took to its accession to the Treaty in 2011—is well documented in a paper by B.A. Hamzah. The United States' foreign policy interests in Antarctica are described in a paper remarkable only for its surprising errors: there is no such thing as "Willard Research Station," and the list of year-round American stations in Antarctica inexplicably omits McMurdo. Siple Station, meanwhile, is hardly "permanent"; it closed in 1988. Russia and several other successor states of the former Soviet Union remain interested in the southern polar continent, and their activities and plans are well chronicled in Irina Gan's excellent paper.

In her paper on "New Zealand's Antarctica," editor Brady mentions that fully 46% of the 350 Kiwis who visit The Ice annually (a contingent larger than China's, despite its massive budget) are scientists, while only one-third are support staff, with the remainder being artists, dignitaries or students. This, of course, is thanks to the joint U.S.-N.Z.-Italian airlift with two to three flights weekly in summer.

"The French Connection" by Chavelli Sulikowski is extensive and informative. Among many other points, it elucidates the possible role of domestic politics in France's 1989 rejection of the treaty to regulate Antarctic minerals.

Aant Elzinga's paper on the gap in scientific internationalism between word and deed in Antarctica makes fascinating reading, and notes that France alone among the seven Antarctic claimant states has a research station outside its claim (Concordia, operated jointly with Italy).

The paper on Antarctic tourism, described in typically sensational manner by author Jane Verbitsky as a "time bomb issue," is marred by her obvious lack of firsthand experience of her topic. She argues, too vociferously, the need for a comprehensive regulation regime for Antarctic tourism, complete with a (non)-"exhaustive list of all possible taxes and charges" that could be levied on tour operators, and undermines her thesis with repeated mentions of "disaster" and the Titanic, which she references even in her title. Bizarrely and repugnantly, Verbitsky goes so far as to declare that "a potential tourism disaster...might give birth to a new type of tourism in Antarctica—literally disaster tourism."

Julia Jabour explores the relatively new activity of biological prospecting in the final paper. She points out the delicate balance between collecting organisms for testing (prospecting) for possible pharmaceutical or nutritive values, and securing "guaranteed continued access to the resource" for what could clearly become a straightforward commercial venture, as well as the question of whether a developer would be required to share benefits (pay a fee or similar charge) for obtaining material from Antarctica, which has no sovereign owner. ¶

Glossary of Glacier Mass Balance and Related Terms

by J.G. Cogley et al. IHP-VII Technical Documents in Hydrology No. 86, IACS Contribution No. 2, UNESCO-IHP, Paris, 2011, vi + 114 pp., stiff cover. Free. Order from ihp@unesco.org

Reviewed by John Splettstoesser

This very useful glossary has been compiled by 11 specialists in the field of glaciers and the attempts to determine a common series of definitions for mass-balance terms. This publication of the International Association of Cryospheric Sciences (IACS) is an attempt to redefine glacier mass balance terminology since the 1960s and 1970s. The most straightforward definition is for mass balance of a glacier itself, which is a measure of the change in mass of a glacier, or part of it, over a period of time (from Foreword, p. I). The attempt to compile definitions for the measurement tools and the results related to mass balance has become more important in the previous decade as a result of climate change and recession of numerous glaciers distributed among the tropics and polar regions, including those in a variety of latitudes and elevations. Further, because of the geographic distribution of glaciers, the language for mass balance terms and processes can differ. Contemporary glaciologists are not only concerned about changes in mass balance, but also changes in sea level, the latter term of more concern to the general public as well as governments that will have to deal with global changes in sea level should warming continue.

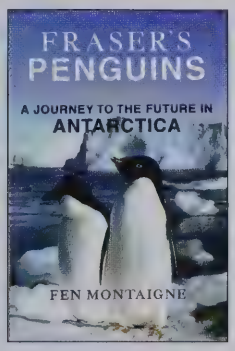
An earlier version ("Mass-balance terms," in *Journal of Glaciology*, Anonymous, 1969), is one of many sources in the Bibliography (p. 106-109) that were used to compile this glossary. The term "Mass balance" is discussed in some detail on p. 61 of the glossary of terms. Definitions of terms range in length from a single line ("Crater glacier," e.g.) to more than a page ("Stake"). Comparable entries and their definitions can be found in the 1,253-page "Encyclopedia of Snow, Ice and Glaciers," published in Springer in 2011 (see *The Polar Times*, Jan. 2012, p. 21 for a review).

The glossary is divided into 8 chapters, the first two consisting of an Introduction (p. 1) and History (p. 2) of the use of mass balance (1874 in Switzerland), followed by Mass-balance Terminology (p. 3-4), Formulations of Mass Balance (p. 4-10), Reporting of Mass-balance Data (p. 10), Departures from Anonymous (1969) (p. 11-13), Units of Measurement (p. 14-16), and then the Glossary itself (p. 17-101). An Index (p. 110-114) is useful in finding terms in the glossary, although it is repetitive because both

the glossary and Index follow the same alphabetical sequence of the same terms.

Although the content differs because the extent of coverage includes sea ice, snow and other terms not found in the IACS glossary, the *Illustrated Glossary of Snow and Ice*, by Armstrong, Roberts and Swithinbank, 1966, has advantages that most glossaries do not have— definitions of terms have linguistic equivalents in some cases, employing not only English but also 8 additional languages. An example is that of "Cirque glacier," found in both Cogley et al. (p. 29) and Armstrong et al. (p. 12), with a brief definition in each, but the equivalent in 8 non-English languages in the latter, plus an index for each of those languages. To include this luxury in the glossary of glacier mass balance terms or any other in glaciology would be impractical and probably of minimal use, since published works on the subject have adopted English as a universal language in most cases.

Glaciologists and libraries will find the IACS glossary invaluable in ensuring that field measurements are conducted using standard procedures, as well as interpretations for publishing. ¶



Fraser's Penguins: A Journey To The Future In Antarctica

by Fen Montaigne
New York, Henry Holt and Co., 2010,
288 p. Hard Cover, $26.00.

Reviewed by John Splettstoesser

This is a story of a dedicated biologist who did his Ph.D. on kelp gulls, the only gull species in Antarctica, and while conducting his field work, gradually realized the changes that were taking place around him with respect to the food chain (phytoplankton to krill to penguins and other seabirds, seals and whales), changes in the growth and retreat of sea ice, and the gradual disappearance of Adélie colonies within the relatively short radius of travel by Zodiac boat from Palmer Station to local islands of study. With an award from NSF's Artists and Writers Program, Fen Montaigne worked as a field assistant to Bill Fraser in 2005-06, for nearly five months, and has gifted us with this remarkable story about a man who started as a graduate student in 1974 at Palmer station on Anvers Island. The author is an accomplished journalist and writer, whose work has appeared in many magazines, was the former Moscow bureau chief of *The Philadelphia Inquirer* and author of *Reeling in Russia*. He received a Guggenheim Fellowship in 2006 for his work on Fraser's penguins, and, as a result of his five months working with Bill Fraser, has an appreciation for the smell of penguin guano and the hard work that goes into the kind of research that Fraser has accomplished over many decades.

Most books about Antarctica include a review of expeditions and exploration, plus the sealing and whaling industries, and the author has done that very well in order to provide a setting for the book and its major theme. In addition, five months of assisting Bill Fraser in his research has obviously had an effect on the author and his impressions of the magic of his surroundings, something that all of us experience in not only our first visit to the continent, but in my case, virtually every visit almost annually that began for me 50 years ago.

Fraser's Penguins is an apt title for a book that goes into detail about how a man can become totally immersed in unraveling the changes in the ecosystem before his eyes for a period of several decades, and thus has contributed to the role of global warming in that part of the world. As Yogi Berra once said, "You can observe a lot by watching," and Bill Fraser has done that and more. There are many books about penguins as cute symbols of Antarctica, but this book has nothing to do with that aspect of the birds, but instead as a delicate and vulnerable part of Antarctica's wildlife that is subject to vagaries of climate changes. Bill's approach in such a study is similar to that of not only looking at individual trees in a forest, but what they mean to the entire forest, as an analogy.

Palmer Station is in the so-called 'banana belt' because of its relatively warm environment, and is the only U.S. station north of the Antarctic Circle. Its latitude is 64º 46'S, with a record high temperature of 51.4ºF on December 11, 2000.

The 12 chapters in the book cover the complete summer cycle of penguins breeding on islands around the Palmer station area, from the time when males come ashore in October and re-occupy the nesting sites from the previous year, busily construct a nest of loose pebbles, the females arrive shortly after, and home life begins. Following copulation, the female lays two eggs, as do all penguin species except for emperor and king species, and depending on success against predation on land (mainly brown skuas) and at sea (leopard seals), as well as availability of food (krill), both eggs might hatch and successful fledglings will result. The study area of Bill Fraser's research is part of a Long Term Ecological Research Network (LTER), launched in 1990 as an effort by NSF to chronicle environmental changes—mainly driven by rising temperatures in 26 ecosystems spanning the U.S., Puerto Rico, Antarctica and Polynesia.

There are five islands in Fraser's core area—Torgersen, Humble, Litchfield, Cormorant, and Christine—where the number of breeding pairs on these islands has dropped from 15,202 pairs to 2,646 pairs since Fraser first arrived at Palmer Station in 1974. If you add Adélies from the two more distant islands Fraser studied—Dream and Biscoe—the number of breeding pairs on all seven islands has fallen from roughly 30,000 to 5,600. In 1993 there were no gentoo penguins in Fraser's study area, but today there are 2,400 pairs, as the species moves southward as climate warms in the Peninsula. As Bill said, "There goes the neighborhood" (p. 155).

Torgersen Island is commonly visited by tourists, in my case for the first time in 1983 as a lecturer on a tour vessel, and many times after. It was interesting to read that as a result of telemetric eggs placed under nesting Adélies to determine whether tourist presence had any effect, "If kept 10 to15 feet away and well monitored, tourists do not seem to have an effect on penguin populations" (p. 140). In the 1970s, at the peak of summer the population at Torgersen was ca. 9,000 pairs of Adélies, and presently has dwindled to near extinction. As colony size is reduced by predation, any colony that drops below 40 breeding pairs is doomed, because of skua expertise in eliminating small numbers of birds in scattered nests.

To give some idea of what penguins are up against in the "survival of the fittest," Fraser banded hundreds of chicks and adults annually from 1986 to 1998. This showed that only about 15 % of the chicks lived to age five, which is when most Adélies begin to breed successfully. Another study island, Dream Island, had 10,000 to 12,000 nesting Adélies in 1970, and since has experienced an 80 percent drop in Adélies, while chinstraps increased.

Climate change has transformed the area, with sea ice contracting, glaciers retreating, weather and snow patterns shifting, and seabirds and mammals responding to those changes ... all of which provided an excellent field laboratory for Fraser to assess an ecological bonanza. The massive glacier Marr Ice Piedmont is the backdrop for the station, exposing a regularly calving ice front next to Palmer, a reminder that the islands' glacier cover is receding. It is named for J.W.S. Marr, one of the two Boy Scouts that Shackleton hired for his Quest expedition in 1922, becoming famous later as a specialist on Antarctic krill.

Through time, Fraser discovered why colonies are disappearing. Increased snowfall is a major factor, as well as sea-ice retreat, which determines whether a large Adélie population will sustain itself because Adélies like more ice cover, whereas chinstraps prefer less sea ice. Adelies also use sea ice in winter as a platform for foraging. He believes that the Adélie rookeries, once home to tens of thousands of penguins but are now shrinking so swiftly, "Fraser's penguins" will become locally extinct in the Palmer region in his lifetime (p. 206).

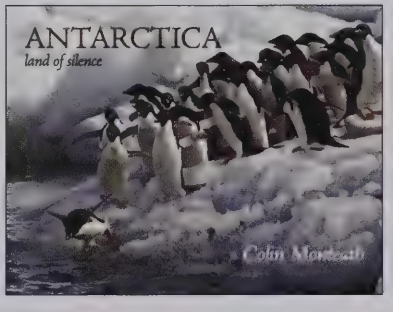
The last two chapters are enlightening with regard to a discussion of global warming and its effect on the Antarctic Peninsula and the rest of the world as well (chapter 11, "The Melting"); and chapter 12, "Departure," devotes interesting space to Bill Fraser's wife, Donna Patterson, and her work on migrations and foraging of southern giant petrels, the largest of the petrels. When they are not at Palmer, Bill and Donna live in southwestern Montana where they have formed Polar Oceans Research Group, a nonprofit based in their home. With the birth of their son, now 6 years old, they alternate in visits to Palmer to continue their ongoing research.

The 16 black-and-white photos add clarity and understanding to the area of field work, and a bibliography of 12 pages and index of 14 pages provide added details.

Sketch maps help to show location of the Peninsula and Palmer area with islands studied.

Further information can be found at the book's website—www.fraserpenguins.com—and if you were fortunate enough to see it when was published, the author's article on "The Ice Retreat" in *The New Yorker* (Dec. 21 and 28, 2009) provides added details to the book.

This is a book that must be read to understand what long-term studies can produce; in Fraser's case, that shrinking sea ice—and not an increase in krill due to the cessation of whaling—was leading to the growth of chinstrap penguins and the decline of Adélies. Fraser's article on the subject was one of the first scientific papers to suggest that global warming was beginning to affect the Antarctic Peninsula and its penguin populations. ¶



Antarctica: Land of Silence

By Colin Monteath
(David Ling Publishing, 2010, 96pp, hardcover NZ$39.99, paperback NZ$29.99)

Reviewed by Jeff Rubin

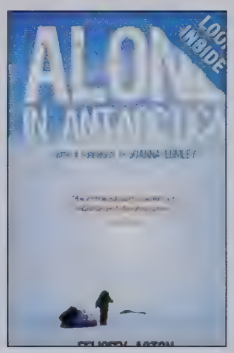
New Zealand photographer, alpinist and author Colin Monteath is well-known to readers of *The Polar Times*, both for his splendid Antarctic calendars (which have appeared annually for 34 years) and for the dramatic centerfold photo showing a massive wave smashing over the bow of the ice-strengthened ship Marina Svetaeva in the Ross Sea that he allowed us to publish in our January 2010 issue.

Land of Silence is his latest photographic gem and, although not even 100 pages long, it ranges widely over the White Con-

tinent, as has Monteath himself during four decades of work in Antarctica beginning in 1973, when he began a decade as Field Operations Officer at Scott Base. Among his many accomplishments, he made the first descent into the inner crater of the active volcano Mt. Erebus on Ross Island in 1978, assisted in the recovery operation after the 1979 Air New Zealand crash on Mt. Erebus, and served as Prince Edward's guide when he visited Antarctica in 1982.

The collection is well edited and features images not only from the Antarctic Peninsula, East Antarctica, and the Ross Sea region (including the historic huts) but also the Falklands, South Georgia, Macquarie Island and New Zealand's sub-Antarctic islands. Some, you may have seen before—the bow-smashing wave is here, as are examples from past calendars—but they are worth seeing again, and many are new. Thoughtfully included is a full-page map at the back of the book showing the locations of the Antarctic photographs.

Land of Silence is available exclusively from the Hedgehog House New Zealand photo library (www.hedgehoghouse.com), which Monteath and his wife Betty founded in 1983. ¶



Alone in Antarctica

by Felicity Aston
320 pages. Summersdale, £8.99

Reviewed by Jane Shilling
www.dailymail.co.uk, 8 August 2013

There are many reasons to be fascinated by Antarctica. The austere beauty and terrifying inhumanity exert a powerful attraction. But for most of us, the fascination is satisfied by reading about it, or watching TV documentaries.

Felicity Aston is different. Aged 23, she spent two years working as a meteorologist at the Rothera Research Station, a British Antarctic Survey base, and fell in love with the place.

"There was nowhere on the planet that could be more fulfilling, nowhere on Earth I would rather be. I had found my perfect place, my perfect match," she writes.

Six years later, in 2009, she trained and led an eight-woman team of novice explorers who skied more than 900km from the Antarctic coast to the South Pole. It was Felicity's first visit to the Pole, and when she arrived, her first thoughts were to wonder whether she could make it all the way across the continent from one coast to the other.

"The notion of being alone in Antarctica thrilled and appalled me," she writes in her account of her solo expedition. "It was bizarre how a plan that caused me so much fear could become such an unshakeable ambition … I didn't feel that I had found my limits."

Many of us are quite happy not to explore the furthest reaches of our physical and emotional stamina—which is probably just as well, or the South Pole might degenerate into the kind of sordid traffic jam that clogs the once pristine summit of Mount Everest.

Felicity planned to cover some 1,700km in 70 days, with a couple of resupply points. For her, the solitude would be as stiff a challenge as the distance.

Alarmingly, a friend at the Royal Geographic Society issued a dire warning against making the trip alone: "I've seen so many wonderful people set off by themselves and they are never quite the same again … They always come back different, and it is never a change for the better."

"The thought I might be altered in some way beyond my control was unnerving," Felicity admits: "I wanted to identify what it was that would motivate me to keep going when there was no one to witness my weaknesses."

And so she found herself, utterly alone on the Ross Ice Shelf, 1,000 miles from the nearest human habitation, sobbing in the snow as the plane that had dropped her there zoomed away. "Ten years of experience in the polar regions had culminated in this, a pitiful weeping fool … I had the feeling that this vast, lonely continent would take much more from me before I was done."

Felicity, unlike most male explorers, shares with the record-breaking solo sailer Dame Ellen MacArthur an almost painful frankness about her emotional and physical weakness. At times in this memoir it seems as though she sobbed her way across Antarctica.

In a way, her vulnerability makes her achievement all the more remarkable. As the journey continues, she begins chatting to the sun, and her description of hallucinations in which she saw little gnome-like creatures riding tiny dinosaurs amid the ice are a rare moment of humour in a narrative not otherwise notable for jokes.

Felicity isn't a natural writer, but her achievement is remarkable and she carries her readers along—rather in the way that she achieved her expedition—by sheer dogged persistence. ¶

In the Trough

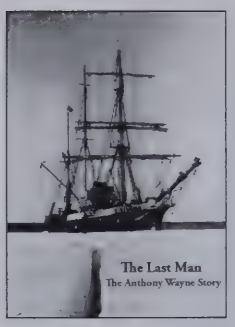
by Thomas F. Jaras
Published by iUniverse
Hardcover/softcover/ebook, 340 pages
Available at Amazon and Barnes & Noble

www.broadwayworld.com, **ALBANY, N.Y., 12 November 2013**—In his new book *In the Trough: Three Years on Ocean Station*, author and former naval reserve officer Thomas F. Jaras recalls his three years in the early 1960s aboard USS *Vance*, a destroyer escort radar picket ship guiding aircraft to the Antarctic continent his first year and then nuclear deterrence patrols on the northern Pacific Barrier, an extension of the Distant Early Warning Line.

The *Vance*, an old World War II-era destroyer, was described by Jaras and his shipmates as "the worst-riding ship in the Cold War Navy." Its task was to stay afloat in mid-ocean, often in some of the world's worst weather conditions, and use its radar to patrol the skies between the Soviet Union and North America. Jaras—young, inexperienced and naïve—fears the best years of his life are being wasted at sea. He desperately searches for women, love and a normal existence during his infrequent short stints ashore. Despite this hardship, his departure from sea duty is tearful.

"Anyone who has been to sea, especially those with naval service and Antarctic experience, will identify with the story," Jaras says. "This is a humorous, yet serious, story about maturing, perseverance and the loneliness inherent in young men going out into the world."

Thomas F. Jaras earned a doctorate in European history from Georgetown University. He has been a Smithsonian fellow, teacher, national renewable energy consultant, museum consultant, state science and technology staffer and naval officer. Now retired, he lives in Albany, N.Y. ¶



The Last Man: The Anthony Wayne Story

Produced and directed by Tom Henderson
DVD, Graceful Willow Productions, 2013
51 min., $25
Available at www.gwillow.com

Reviewed by Laura Snow

In 2010, while author John Stewart was researching his *Antarctica: An Encyclopedia*, 2nd edition, he was trying to find surviving members of the United States Antarctic Service Expedition, 1939-1941. He found one man, Anthony Wayne, born Anthony Kelczewski. During an early conversation with Stewart, Mr. Wayne pointed out that he was the "last man," thus the title of this extraordinary documentary film.

Born in Schenectady, New York, on June 12, 1915, Anthony Wayne was the son of Polish immigrants. At age eighteen, Wayne joined the Navy. A body-builder, boxer and wrestler who was used to cold climates, Wayne was handpicked by Admiral Byrd to serve on his flagship, the seventy-year-old, Scottish-built, three-masted barkentine, *USS Bear*. Fortunately, Wayne took a movie camera with him, providing posterity with hours of original film footage shot aboard the *Bear* and on the ice.

During the war, Wayne served as a gunner aboard the *USS San Diego* (the second most decorated ship in World War II). In the film, Wayne talks about the battles of Guadalcanal and Coral Sea and further mentions the numerous battles in which the *San Diego* participated prior to entering Tokyo Bay, earning the *San Diego* eighteen battle stars.

After the war Wayne went to deep sea diving school in Washington DC. He would be promoted to boatswains mate, 2nd class, 3rd class, and Chief Petty Officer. Finally, after twenty-six years in the Navy, Wayne retired as a Chief Warrant Officer.

The film ends with the official presentation ceremony of an Antarctic geographic feature named for Wayne: Wayne Head. Jerry Mullins, Chief of the USGS Arctic and Antarctic Programs and Chair of the Antarctic Names Committee of the U.S. Board on Geographic Names, traveled to Wayne's residence in order to make the presentation. It was a proud and emotional Anthony Wayne who expressed his appreciation to Mr. Mullins.

Tom Henderson's "The Last Man: The Anthony Wayne Story" is a remarkable documentary about a brave man and his fascinating life. Mr. Wayne's story is told through his interviews with the filmmaker, his own film footage from pre-war Antarctica, and photographs and footage depicting the war, his service as a deep sea diver, and other events of his life.

Anthony Wayne died at the age of 98, on October 6, 2013, in Niskayuna, New York. ¶

TRIBUTES

Darin Nicholas Johnson

Nick Johnson, 41, author of *Big Dead Place: Inside the Strange and Menacing World of Antarctica*, took his life on November 28, 2012, at his home in West Seattle. Nick's death is a heartbreaking loss to his family, to his friends and to so many of us who knew him as an essential part of the American Antarctic community. He had a voice and a spirit unlike any I've known, equally cynical and generous, funny and soulful.

Born on February 10, 1971, in Vancouver, B.C., Nick was raised in the Seattle area. He received his B.A. after attending Western Washington University and Evergreen State College. Nick's journey through life as a creator—writer, musician, filmmaker, philosopher and social critic—began early. One friend from his Evergreen days describes Darin (as Nick was known then) in that time as "a spelunker in the realm of ideas and imagination, always practicing and honing his crafts of writing and songwriting." He was "a creative genius, a gentle soul, a pretty cynical bastard with a wicked sense of humor, a slow ooze of charisma, and a Jack Nicholson grin." After college, Nick adventured as a taxi driver in Seattle, as an Alaskan fish cannery worker and as an English teacher in South Korea, writing about his experiences as he went. Then he brought his talents, his force of personality and his unique worldview to Antarctica, where he found his strange paradise: an American microcosm of bad management and fascinating, well-traveled transient workers with great stories and a penchant for honest cynicism. For years, Nick worked happily in the USAP as a dining attendant, a garbageman and a heavy equipment operator. He worked in McMurdo and at the South Pole, both summer and winter. Nick fell in love with the Ice.

Many observers and participants in Antarctic affairs presume that life in Antarctica has been circumscribed by the heroic age and the Antarctic Treaty. Rather than a modern workplace and human community *in extremis*, it is described primarily as a haven for science run in noble fashion by the NSF and similar international agencies. Nick recognized that false premise soon after settling into McMurdo, realizing that the primary experience of the Antarctic is that of the thousands of workers who create and maintain the community from which science groups—a minority population—can do their good work. Until Nick came along, very little of the true, everyday experience of Antarctic residents was known to the outside world.

Nick quickly set out to give voice to the neglected majority. He did so at first with an anonymous broadside called *The Symmes Antarctic Intelligencer*, a satirical newsletter which took aim at anything that smelled like hypocrisy, whining, petty tyranny or ill-conceived authority. Not long after, he built the website "Big Dead Place" as a platform not only for his own writing, but also as an anonymous forum through which USAP participants could voice opinions and engage in a larger conversation about life in the Antarctic, all without fear of NSF or Raytheon reprisal.

Though he rarely suffered fools in print, he was loyal, generous and gentle with his friends and coworkers. With Nick we made films, we drank and we talked Antarctic history, culture and politics; we were compelled by him to make art of our Antarctic circumstance in any way we could. He created a creative context through which we could see our Antarctic community as an extension of American culture, a community which deserved both respect and suspicion. What he craved most of all was honesty, which, in a company town, can be hard to come by.

An independent publisher discovered Nick's website and convinced him to write a book. To do so, Nick rented a flat in Christchurch, New Zealand, where I joined him for several months while, for 15 hours a day, we wrote at our computers, talked about Antarctica or researched in Christchurch's Antarctic libraries. Nick knew that for the book *Big Dead Place* to be successful, he would have to teach himself the art of large-scale narrative nonfiction; for him, this meant perfecting his version of "Gonzo journalism," a term originally used for the work of Hunter S. Thompson (*Fear and Loathing on the Campaign Trail*, etc.). Gonzo journalism adheres to the facts but without claim to objectivity; the narrator embraces his opinions, his attitude, even the dark side of his personality, all in a quest for a larger truth.

Big Dead Place: Inside the Strange and Menacing World of Antarctica sold well and was critically acclaimed. *The New York Times* review compared it to Joseph Heller's masterpiece *Catch-22*, and *The Times of London* called it a "savagely funny M*A*S*H on ice" and named it a Book of the Year. HBO bought the rights. And so on.

But that acclaim came from literary and cultural communities in the U.S. and Europe, which scarcely overlap with the world of Antarctic administration and corporate management. In Antarctic circles, the book has had mixed reviews. Many USAP workers loved *Big Dead Place* because for the first time they recognized their own experience in an Antarctic book. Nick's no-bullshit approach reinforced his place in Antarctic affairs as something of a folk hero. But readers unfamiliar with Gonzo journalism or who only see Antarctica through the noble façade of the Heroic Age found the book to be somehow beneath the dignity of Antarctic affairs. Understandably, it can be difficult for a reader to reconcile the historical and contemporary 2media depictions of Antarctica with the sex, drinking, obscenities and obscure references that form part of Nick's narrative. What they should realize, however, is that *Big Dead Place* is a literary work quite intentionally designed to disrupt a century of Antarctic literature. The stories in Nick's book, of bad management, Boozy the Clown and squabbles between USAP departments are just as important within Antarctic culture as are the results of climate research and the last diary entries of a dying Robert Falcon Scott. The book, according to one reviewer, "superseded a century's worth of self-serving ice-beard memoirs and press-junket hackery."

Literary quality did little to endear Nick to USAP management. Inevitably, he was blackballed from the ice, despite years of top-quality performance reviews by his supervisors. (Specifically, he was blacklisted by the CEO of Raytheon Polar Services, who called him in for an "admonishing teleconference" on Midwinter's Day.) In the years which followed, Nick maintained the BDP website and stayed in touch with his extended Antarctic family, but began doing other federal contract work in the war zones of Iraq, then Afghanistan, work which by all accounts took its toll on him emotionally. The same sensitivity that made him a great writer and a fine observer of human affairs probably made him ill-suited for years of exposure to military occupation and suicide bombers. Finally, in the weeks before Nick's death, he had applied to the USAP again (with PAE, an arm of the new contractor Lockheed-Martin) and been accepted. Just a few days before his deployment date, however, his offer was rescinded. The letter read, in part, "It has recently come to our attention that, writing as Nicholas Johnson, you are the author of *Big Dead Place*. It is our opinion that due to the nature and content of this book, you would not be a suitable candidate for employment under the Antarctic Support Contract." However frustrating, it is a mark of the quality of Nick's book that it made two corporations and a federal agency afraid of him.

Though Nick is still relatively unknown, no one has done more to change the way we understand life in Antarctica. Nick was unflinching in his depiction of day-to-day life in the USAP and particularly in his critique of ill-conceived bureaucratic authority, but we should remember that he sought to create a dialogue within and about Antarctica that cut through cliché and hypocrisy in order to describe things as they really are, in all their glory and strangeness. Not all his readers realize that Big Dead Place (both the book and the website), which can be both brutally honest and explicit, is first and foremost an expression of Nick's love of Antarctica and of the people in the USAP. He loved the place so much that he wanted to make it better. And he did. There is nothing like Nick or his writing in all of Antarctic history. Not many people can say they upended a continent's literature. ¶ **Jason Anthony** (author of ***Hoosh...)*** [***Editor's Note***: Further insight into Nick Johnson can be found in a book review of **Big Dead Place**, by Jeff Rubin, plus an email interview with him by Jeff in *The Polar Times*, January 2006, p. 32-33.]

Harry G.R. King

The polar world and the American Polar Society lost a good friend and great resource this past July with the death of Emeritus Associate Harry King, librarian at the Scott Polar Research Institute (SPRI), Cambridge University from 1955 until his retirement in 1983.

Harry was probably best known for co-editing SPRI's 19-volume library catalog, published in 1976; his editing of numerous publications, including the Antarctic diary of Victor Campbell, South Pole Odyssey, and The Arctic, an authoritative guide to the literature of the Arctic and Sub-Arctic; and his own book, The Antarctic, published in 1969.

I first met Harry through his book and then face-to-face upon my arrival at the Scott Polar Research Institute, Cambridge University, as an M.Phil. student, following my retirement from the U.S. Navy in 1981. He was to become a steadfast friend and important mentor at Cambridge and later, when I embarked upon my Ph.D. and a lengthy academic career devoted to the commercial use of submarines in the Arctic and the role of the Polar Regions in global warming. He will be missed. ¶ ***Alfred S. McLaren***

OBITUARIES

Albert "Al" Wendell Erickson

Al Erickson, Ph.D., age 84, passed away Sunday, October 27, 2013 in Bellevue, Washington. Dr. Erickson was Professor Emeritus in the Department of Fisheries at the University of Washington. He joined the UW in 1975 and retired in 1993. Dr. Erickson was a leading expert in bear biology and wildlife management, and also conducted research on marine mammals including killer whales and Antarctic seals. He completed seven research tours of Antarctica. In 1971-72 he was leader of a biology party that made population studies of seals, whales, and birds in the pack ice of the Bellingshausen and Amundsen Seas aboard USCGC *Southwind* and its two helicopters. Prior to coming to UW he was Associate Professor with the University of Idaho in Moscow, Curator of Mammals for the Bell Museum at the University of Minnesota, and Regional Director of Fish and Game in Anchorage, Alaska.

Dr. Erickson was born in Chicago June 23, 1929 to Carl and Pearl (Campbell) Erickson, and raised in Germfask, Michigan. At the age of 17, he joined the Marine Corps where he served as a fleet marine aboard the USS *Midway* as an anti-aircraft gunner. He received his BSc and Ph.D. from Michigan State University where he met his wife, Laurel (Fountain) Erickson (deceased). A colorful character, Dr. Erickson was known for his keen sense of humor and unwavering commitment to the Republican party. In addition to his career as a professor, he served as Mayor of Yarrow Point, and in retirement became a rancher, farmer, and hunting club proprietor in Monroe, Washington. At the age of 74 he took up track and field and became the Washington State, US and World decathlon champion for his age group. His accomplishments were featured in several magazines. Erickson Bluffs, coastal Marie Byrd Land (75 S, 136.5 W) are named for him. ¶ ***Seattle Times*, modified, 11 Nov. 2013**

Chester W. Segers

Chester W. Segers, 86, of Inverness, Florida, died 15 November 2013, at Hospice of Citrus County in Inverness. He was born 13 February 1927 in Blount County, Alabama. Chief Segers retired from the U.S. Navy with more than 21 years of service. He was awarded the Navy Unit Citation, five Good Conduct Medals, National Defense Service Medal, American Theatre Campaign Medal, WWII Victory Medal and Asiatic-Pacific Campaign Medal. Chief Segers was among the first group to winter at the Amundsen-Scott South Pole Station, where he served for 12 months as station chef. He was a member of Old Antarctic Explorers Association (OAEA). Mr. Segers also served as chef on President Truman's yacht, the USS *Williamsburg*. Following his naval service, he was employed by James Ferreria & Sons Trucking Company in Canton, Mass.

His wintering at Pole begs commentary not included in his formal obituary. His wintering-over group—which followed the occasion of the first landing of an aircraft at Pole in October 1956, at a site first visited after the polar party of Captain Scott left there in January 1912—had no preparatory information regarding the surface condition of the snow for a ski-equipped aircraft landing. Plus, no one had previously spent the winter at such a remote location in the interior, at an elevation of some 9,200 feet above sea level, a major challenge for a chef as well as his station mates. Thus, there was no prior information on the temperatures one could expect at the site. The winter Segers was there, temperatures reached a low of -102F (-74C).

Chief Chester W. Segers is on the far right, middle row; Paul Siple is second from right on the back row. The group photo with names of all those pictured can be found by searching on "South Pole Winter 1957." Many of those names are shown as geographic features in the Sentinel Range of the Ellsworth Mountains, with Mount Segers a few miles east of Mt. Tyree and others within the same area.

With all those challenges before him, Chief Segers successfully carried out what was expected of him, cooking for a group of men under the leadership of Paul Siple, the Boy Scout who accompanied Admiral Byrd on several expeditions. ¶ **John Splettstoesser, Modified from Citrus County Chronicle, 17 November 2013**

Robert Rene Gauchie

It is with great sadness that the family announces the passing of Bob on August 31, 2013. Bob was born on December 12, 1927, in Edmonton and grew up in Barrhead, Alberta.

At the age of 17 (1944) Bob joined the Canadian Armed Forces and in the ensuing years enlisted with the Royal Canadian Air Force. In 1961 Bob retired from the RCAF and became a full time civilian pilot and engineer. He spent many years working as a bush pilot in the north. He truly loved flying in the north and its great people. This love nearly claimed his life; but he managed to survive 58 days alone inside his crashed bush plane through the deep freeze of an Arctic winter. Bob became known as "The man who refused to die" and his record for solo Arctic survival still stands to this day. He was found on April 1st 1967 by Ron Sheardown and Glen Stevens, 54 pounds lighter, scarred by frostbite and smelling worse than a hog. Sheardown recalls, "He stood there with that blue suitcase, like a man waiting for a bus." In the moment of rescue, with the same determination that had so long sustained him, he drew himself tall and began limping toward the turboprop-a haggard creature with shaggy hair, one foot wrapped in dirty canvas, and a bearded, emaciated face lighted by a shining grin. "Hello," Gauchie said. "Do you have room for a passenger?" In 1968 he founded now-famous Buffalo Airways and later in 1970 sold the business to his friend and partner Joe McBryan. Bob needed a change and the family relocated to the Okanagan for 30 years. He was active for many years with the Penticton Air Cadet Squadron. In 2002 Bob and Fran moved to Victoria to be closer to family. Bob was an affable man, quiet by nature, peaceful, kind-hearted, well-spoken and gifted with a wonderful sense of humor. Bob had an unstoppable inner strength; a combination of sheer true grit, determined mind and this stubborn resolve not to die. Bob was a handful at times, took many risks, but clearly lived life on his own terms. His refusal to give up, despite all odds, defined Bob's unique character. He was an inspiration to many. In the past six years Bob became a friend to many at Mount St. Mary Hospital. Special thanks to his physician Dr. Salmaniw and to the nurses and staff for their excellent care. We are forever grateful that Bob was loved and cared for with such enduring kindness and respect. No service by request. A Celebration of Bob's Life will be held on April 1st, 2014 in Victoria. More details to follow. ¶

Norman C. Venzke

RADM Norman C. Venzke died on November 21, 2013. He was born in Baltimore, Maryland, on December 8, 1927.

He graduated from Baltimore Polytechnic Institute in February 1946 and was appointed to the Coast Guard Academy in the spring of that year. He graduated from the Academy in June 1950 and commenced his career at sea in USCGC *Ingham* based in Norfolk, Virginia.

Admiral Venzke served in a wide variety of operational assignments, including duty in seven cutters, four of which were polar icebreakers. He commanded two of the latter, *Northwind* (1972 and 1973) and *Polar Star*. During the Vietnam War, he served in triple-hatted concurrent assignments as (1) Commander, Gulf of Thailand Surveillance Group (a U.S. Navy task group), (2) Commander, Coast Guard Division Eleven, and (3) Fourth Coastal Zone Adviser to the Republic of Vietnam Navy.

His shore assignments included five years as Chief, Office of Operations at USCG HQ; Commander, Second Coast Guard District; Chief, Weapons Section, USCG Academy; Assistant Chief, Military Readiness Division at USCG HQ; Ship Operations Officer on staff of Commander, U.S. Naval Support Force, Antarctica; Commanding Officer, Ship Training Detachment Two and watch officer, Rescue Coordination Center, San Juan, Puerto Rico.

After his retirement in 1985, he assumed the duties of President, National Defense Transportation Association, followed by that of President, United States Branch of the Western Front Association (WFA), a non-profit British World War I remembrance organization. He was a consultant for a few years and also served

as beach master during nine cruises to the Antarctic Peninsula on board a French cruise ship. He was active in St. Michael Lutheran Church, Virginia Beach, as well as Rotary International and The Rotary Foundation and as a volunteer with the Food Bank of Southeastern Virginia. He also served on the Advisory Board of the Tidewater Area Command of the Salvation Army.

He received a B.S. in Engineering from the Coast Guard Academy, a B.S. in Electrical Engineering and a designation as an ordnance engineer from the U.S. Naval Postgraduate School and a Master of Science in Administration from The George Washington University. Additionally, he was Distinguished Graduate of the Industrial College of the Armed Forces.

His military decorations included a Legion of Merit with a combat "V" and two gold stars, a Meritorious Service Medal and a U.S. Navy Commendation Medal in addition to various campaign medals and Coast Guard and Navy unit commendations. As a consequence of his considerable duty in Antarctica, Venzke Glacier was named for him at 75 00S 134 24W. ¶ **Published in *The Virginian Pilot* on 23 November 2013**

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Membership Letter

Hello from the coast of Maine! The days have grown short, the leaves have mostly come down and signs of snow have been experienced here in the mid-coast region. And we are wrapping up another calendar year of the American Polar Society. Thank you to the many members who have provided current email addresses, which helps us in more timely communications. Thank you to the many who have taken advantage of using our PayPal features from our website to electronically pay for membership renewals, purchase pins or patches and/or to donate to the APS. Thank you to all who conscientiously renew your memberships, provide new contact information and addresses, and/or take the time to contact us with news, notices, happenings and events. The Sheldon Bart book deal is still going on (see front inside cover for more information), so please take advantage of that offer if interested. We are always appreciative when current APS members bring in new people, whether through gift memberships or by recruiting them to our ranks. Thank you to those who have done so.

Below is the list of new APS members who joined our ranks this year, including new APS LIFE members. We also have listed APS members about whom we have been notified as having passed away within the last year, as well as those we lost from the general polar community. Please keep them in remembrance. And as always, it has been a pleasure being your membership chair, even as I wrap up my tenth year in service!

Charles Lagerbom

Membership Chair

CHANGES 2013 (Last updated 11/13)

■ Online (includes PayPal ■ Ant Con
■ Gift ■ Other

New Members

- Robert Breyer (Los Angeles, CA) Jan 2013
- Matthew Feely (Washington, DC) Feb 2013
- Pamela Latham (Los Angeles, CA) Feb 2013
- Rebecca Raines (Alexandria, VA) Feb 2013
- Neil Gardner (Bryn Mawr, PA) March 2013
- David Spilman (Petaluma, CA) March 2013
- John Shank (Coos Bay, OR) April 2013
- Anthony Goddard (Woods Hole, MA) April 2013
- David Dubois (East Falmouth, MA) April 2013
- Bob Campbell (Wrentham, MA) April 2013
- Mark Kurz (Woods Hole, MA) May 2013
- Walter Tucker (Grantham, NH) May 2013
- Paul Dayton (Solana Beach, CA) June 2013
- Richard Williams Jr (West Falmouth, MA) June 2013
- Slavin, Andrew (West Palm Beach, FL) July 2013
- Merritt Helfferich (Fairbanks, AK) Aug 2013
- Paul Koulouris (East Sandwich, MA) August 2013
- Mika Mered (NY, NY) August 2013
- Lynn Schulze (Reedsville, PA) October 2013
- Extreme Images Inc (Mission Hills, KS) October 2013
- Polarguide and Logistics (FINLAND) October 2013
- Take Better Pictures (UK) October 2013
- John Woods (Annapolis, MD) October 2013
- Jill Ferris (Littleton, CO) October 2013
- Mark Vogler (Sonoma, CA) November 2013

New APS LIFE Members

Ted Rockwell (Palmer, AK) January 21, 2013
Richard Bower (Belfast, ME) April 15, 2013

APS members and those of the polar community in Remembrance:

Michael John Denton (1/23/13)
Max C. Brewer 911/21/12)
Norbert Untersteiner (3/14/12)
David Luther Sylwester (4/26/13)
Joe Farman (5/11/13)
Philip Arthur Balink-White (6/5/13)
Harry King
P.F. Watzek
Robert "Hoot" Hartman (9/8/13)
Anthony Wayne (10/6/13)
Barbara Ridgely (4/28/13)
Patricia Kauders (widow of Eddie Crockett BAE I)
Paul J. Jorgensen (1/22/13)
Albert (Al) Wendell Erickson (10/27/13)
Jim Brandau

Elephant seals, Ocean Harbour, South Georgia

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Southern Light: Images from Antarctica,
reviewed in this issue on page 33.